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Results of the 2010 Eastern and Northern Bering Sea Continental Shelf Bottom Trawl Survey of Groundfish and Invertebrate Fauna

by
R. R. Lauth

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Abstract

From June to August 2010, the National Marine Fisheries Service's Alaska Fisheries Science Center, Resource Assessment and Conservation Engineering Division, conducted its 29th annual eastern Bering Sea (EBS) continental shelf bottom trawl survey of groundfish and invertebrate fauna. In addition, the 2010 survey coverage was expanded to include the northern Bering Sea (NBS). The expanded study area covered the entire Bering Sea continental shelf from 20 to 200 m bottom depth to the U. S.-Russian Convention Line between the Alaska Peninsula and the Bering Strait, including Norton Sound. Three stern trawlers, the 43.5-m FV *Alaska Knight*, the 40-m FV *Aldebaran,* and the 38-m FV *Vesteraalen* were chartered to sample this survey area. Demersal populations of fishes and invertebrates were sampled by trawling for 30 minutes at stations centered within a stratified systematic grid consisting of a total of 376 stations in the EBS and 145 stations in the NBS. At each station, species composition of the catch was determined, and length distributions and age structure samples were collected from ecologically and commercially important species. All survey stations were sampled successfully in the EBS, and all but three stations were sampled successfully in the NBS.

For the fifth consecutive year, average surface (5.4°C) and bottom (1.4°C) water temperatures for the EBS shelf were well below the long-term means from 1982 to 2009 for the surface (6.6°C) and for the bottom (2.3°C). A total of 120 species of fishes representing 23 families and 74 genera, as well as 199 species of invertebrates representing 14 phyla, were identified in the catches from both the EBS and NBS. Fish taxa in the EBS accounted for 74% of the total CPUE compared with the NBS where fish taxa accounted for only 38% of the total CPUE. In the EBS, walleye pollock (*Theragra chalcogramma*), Pacific cod (*Gadus macrocephalus*), yellowfin sole (*Limanda aspera*), and rock sole (*Lepidopsetta* spp.) comprised

77% of the total fish biomass, and in the NBS, yellowfin sole and Alaska plaice (*Pleuronectes quadrituberculatus*) comprised 61% of the total fish biomass. The majority of invertebrate biomass in both the EBS (67%) and NBS (67%) consisted of echinoderms and crustaceans.

Survey results presented herein include abundance estimates for fishes and invertebrates, geographic distributions and abundance-at-length of the more common fish species, and summary surface and bottom temperature data during the summer survey period. Appendices provide station data, summarized catch data by station, species listings, and detailed analyses of abundance and biological data of the sampled populations.

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Introduction

From June to August 2010, the National Marine Fisheries Service (NMFS) Resource Assessment and Conservation Engineering (RACE) Division of the Alaska Fisheries Science Center (AFSC) conducted its 29th annual EBS (eastern Bering Sea) continental shelf bottom trawl (BT) survey of groundfish and invertebrate fauna. In addition, the 2010 survey coverage of the continental shelf was expanded to include the NBS (northern Bering Sea),which is bounded by the shelf break and the U.S.-Russian Convention Line in the west, the Bering Strait in the north, and Norton Sound in the east (Fig. 1). The 2010 EBS and NBS shelf surveys were conducted concurrently with the 2010 EBS upper continental slope BT survey (Hoff and Britt 2011) and together they represented the most comprehensive BT survey coverage of the Bering Sea (roughly 800,000 km^2) since the U.S. government began scientific BT surveys in Alaska.

Sampling on the NBS shelf was done in conjunction with the annual EBS shelf bottom trawl survey. The methodology for sampling both the EBS and NBS was exactly the same, but the main objective for sampling each area was different. The EBS shelf supports one of the most productive groundfish and crab fisheries in the world (Bakkala 1993) including commercially valuable species such as walleye pollock (*Theragra chalcogramma*), yellowfin sole (*Limanda aspera*), Pacific cod (*Gadus macrocephalus*), snow crab (*Chionoecetes opilio*), blue king crab (*Paralithodes platypus*), and red king crab (*P. camtschaticus*). Fishery-independent data from annual EBS bottom trawl surveys are vital to the management and conservation of commercial and non-target groundfish and crab species under the North Pacific Fishery Management Council (NPFMC) fisheries management plans. In contrast, the NBS has no large-scale commercial fisheries; however, climate change is a concern because of its potential to fundamentally alter the biological community thereby impacting fishes, crabs, marine mammals and the subsistence

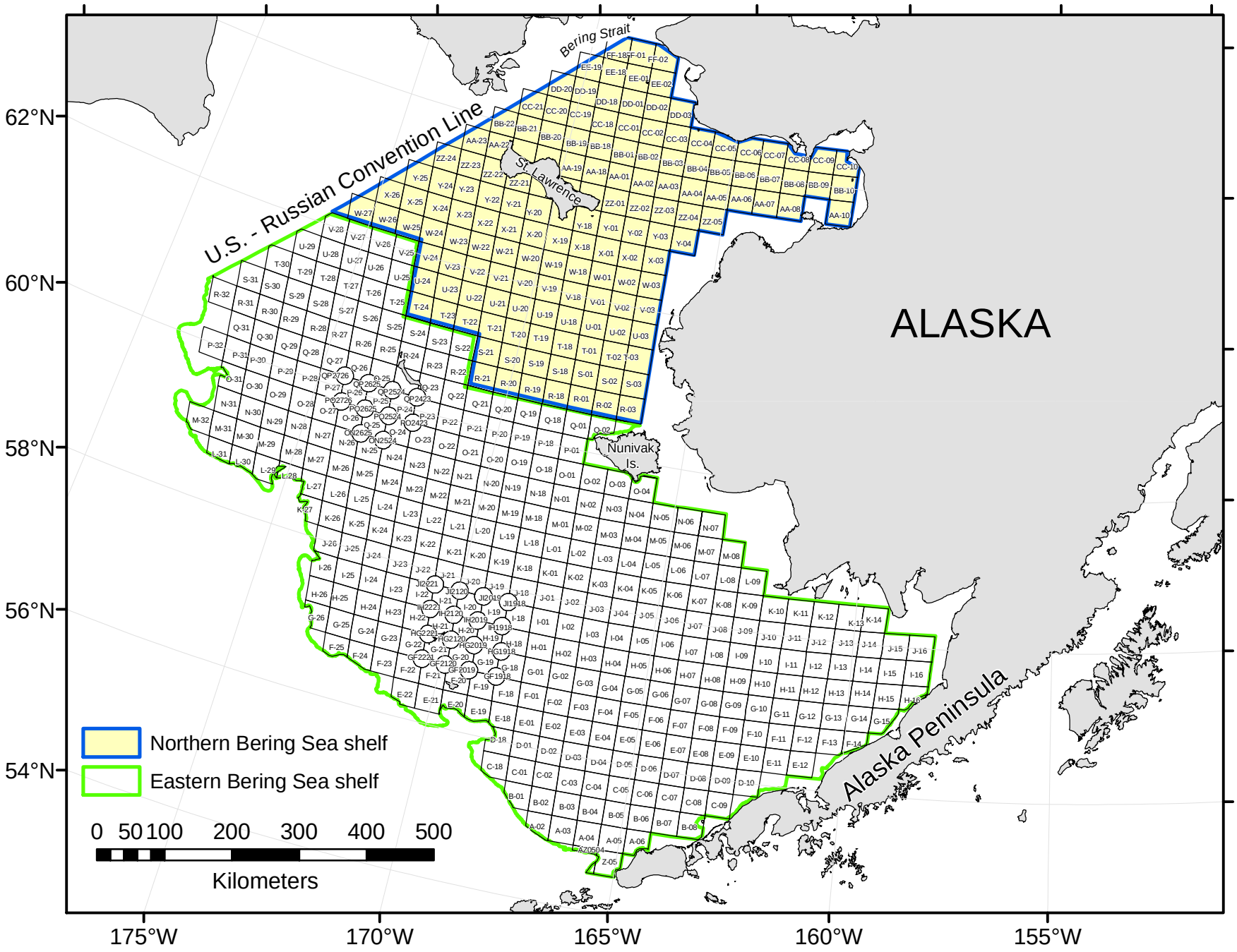

Figure 1. -- Grid map of sample stations for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

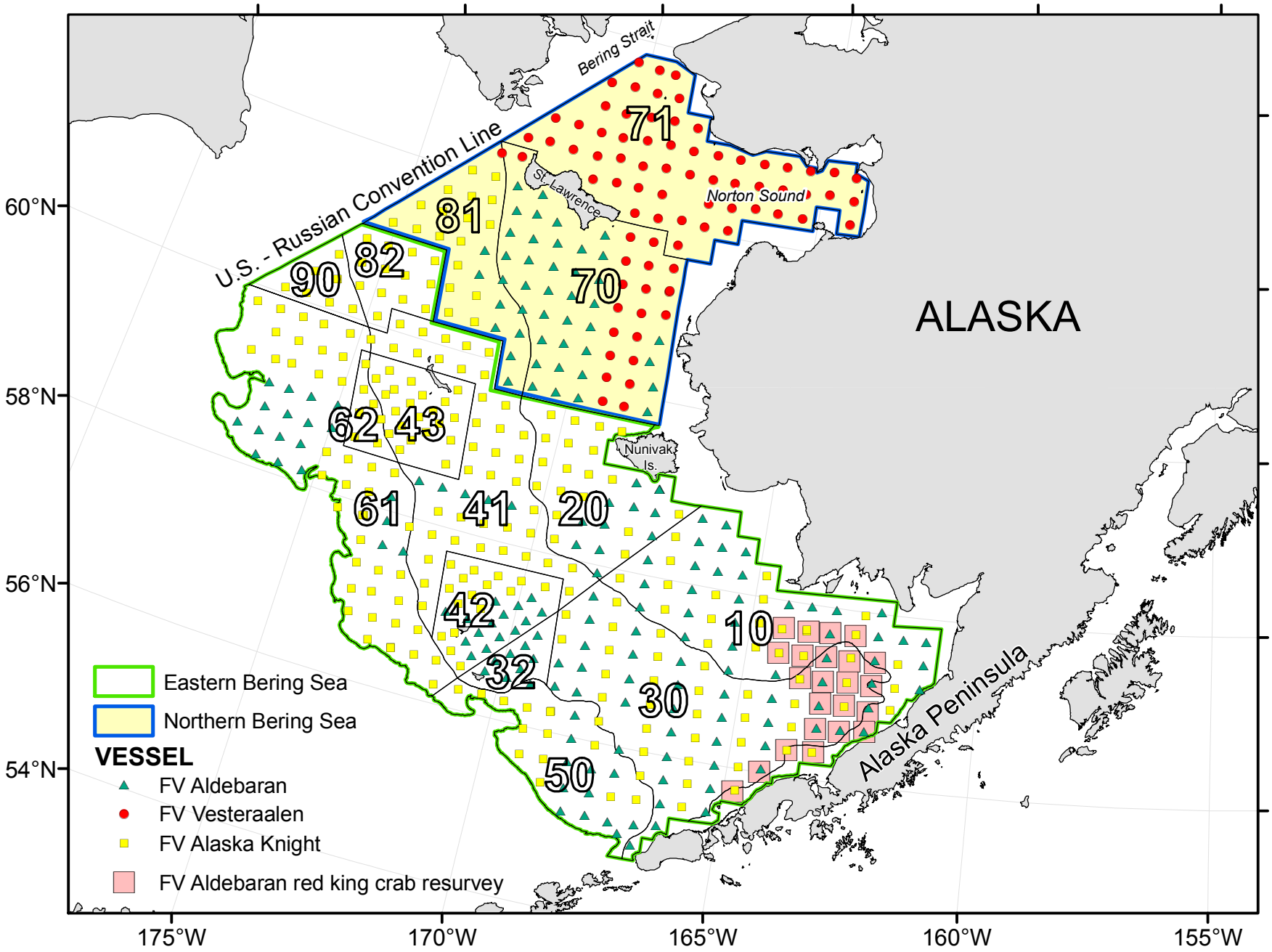

Figure 2. -- Sampled survey stations by vessel and the stratification scheme used for data analysis of the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

fisheries of western Alaska fishing communities. To address concerns about climate change and its impacts on the NBS, the AFSC developed a Loss of Sea Ice (LOSI) Research Plan (Hollowed et al. 2007). A primary objective of the LOSI Research Plan was to conduct a series of bottom trawl surveys in the NBS for baseline data to monitor the distribution, abundance, and general ecology of marine animals living on or near the seafloor to determine the effects of climate change and the loss of seasonal sea ice.

Shared objectives for both the EBS and NBS BT surveys were to provide data on 1) distribution, abundance, and biological condition of groundfishes, crabs, and other demersal macrofauna; 2) ongoing studies on the age and growth, biology, behavior, and dynamics of key ecosystem components; and 3) catch per unit effort (CPUE) and size composition data for the commercial fisheries of the United States.

This report presents results of a standardized BT survey conducted by the AFSC on both the EBS and NBS continental shelf in 2010. The EBS portion of this survey represents the 29th contribution to the EBS shelf time series, and the combined EBS/NBS continental shelf BT survey is the first in a new time series. Data reports with results from earlier EBS BT surveys can be found in AFSC/NOAA Technical Memoranda (years 2008-2010) or in AFSC Processed Reports (prior to 2008) from the AFSC Publications Database (http://access.afsc.noaa.gov/pubs/search.cfm). Commercial king, snow, and Tanner crab fisheries in the Bering Sea and Aleutian Islands Regions are managed by the Alaska Department of Fish and Game (ADF&G) under a NPFMC fishery management plan. Detailed results for the analysis of crab data from this and previous surveys are presented in annual Bering Sea crab survey reports also available from the AFSC Publications Database.

History of Bering Sea Bottom Trawl Surveys

The involvement of the U.S. government in Bering Sea BT surveys dates back to the 1940s when effort was engaged primarily in exploratory work for commercial fisheries resources (Zimmermann et al. 2009). Early efforts led to the development of a valuable single-species fishery in Alaska for red king crab (*Paralithodes camtschaticus*), and continued U.S. BT surveys into the 1970s focused on cooperative arrangements with private industry to study the biology, distribution, abundance, and best fishing practices for red king crab (Zimmermann et al. 2009).

The first large-scale systematic survey of the EBS shelf was conducted in 1975 under contract from the U.S. Bureau of Land Management to collect baseline data for assessing the potential impact of the growth in the offshore oil industry on the development of Bering Sea groundfish and crab fishery resources (Pereyra et al. 1976). During the 1975 baseline survey, sampling was conducted over the EBS shelf between the 20-m and 200-m isobaths from the Alaska Peninsula north to approximately 62°N. In 1979, a more comprehensive survey of the Bering Sea shelf was undertaken in cooperation with the Japan Fisheries Agency (Bakkala and Wakabayashi 1985). That survey encompassed the entire region sampled in the 1975 baseline study plus the upper continental slope waters and part of the NBS. A hydroacoustic survey was also initiated in 1979 to assess the midwater component of the walleye pollock population.

Following the expansive 1979 effort, BT surveys continued on the EBS shelf on an annual basis, and in the combined NBS shelf and upper continental slope on a triennial basis. The survey trawl gear and sampling methods lacked consistency through 1981, hence the starting point for the shelf BT survey time-series is generally considered to be 1982, when the survey trawl and sampling practices were standardized to a systematically designed grid pattern of

356 stations (Bakkala 1993). Beginning in 1987, survey coverage was increased to include more of the known ranges of walleye pollock and snow crabs by adding 20 stations in Strata 82 and 90 up to the edge of the U.S.-Russian Convention Line (Fig. 2).

The triennial surveys of the NBS and EBS slope were discontinued after 1991 due to lack of funding; however, starting in 2000, the slope BT survey resumed on a biennial basis as a new time series using standard AFSC gear and methods (Stauffer 2004, Hoff and Britt 2011). In 2010, the extension of the EBS shelf survey grid into the NBS was the start of a new time series because it was the first time that the systematic sampling design and standard sampling practices of the EBS shelf were applied in the NBS.

Methods

Survey Area and Sampling Design

The standardized BT survey is based on a stratified systematic design consisting of a grid with a fixed sampling station at the center of each 37.04 × 37.04 km (20 × 20 nautical mile) grid square (Fig. 1). In areas surrounding St. Matthew and the Pribilof Islands, high-density "corner stations" are sampled to better assess local blue king crab concentrations (Fig. 1). For the first time in 2010, the standard sampling grid was expanded to include an additional 145 stations in the NBS shelf (Fig. 1). The northern extension was bounded by the U.S.-Russian Convention Line in the northwest, the Bering Strait in the north, and Norton Sound in the east. The results reported herein include data analyses for both the EBS and NBS.

Survey Vessels and Sampling Gear

From 3 June to 15 August 2010, sampling at survey stations in the EBS and NBS was coordinated between three chartered commercial fishing vessels: the FV *Aldebaran*, FV *Alaska Knight*, and FV *Vesteraalen*. All three vessels are house-forward trawlers with stern ramps. The *Aldebaran* has a length overall (LOA) of 39.6 m (130 ft), the *Alaska Knight* has an LOA of 43.5 m (143 ft), and the *Vesteraalen* has an LOA of 38 m (125 ft). The AFSC equipped each of the vessels with standard 83-112 Eastern otter trawls, which have 25.3-m (83 ft) headropes and 34.1-m (112 ft) footropes (Fig. 3). Survey trawls were towed behind 816 kg, 1.8 × 2.7 m, steel V-doors and paired 54.9 m (30-fathom) dandylines. Each lower dandyline had a 61 cm chain extension connected to the lower wing edge to improve bottom-tending characteristics.

All fishing operations were conducted in rigorous compliance with national and regional protocols detailed in Stauffer (2004). Any hauls that sustained significant gear damage or contained debris such as discarded crab pots were resurveyed immediately following the unsucessful haul. Netmind net mensuration systems (Northstar Technical Inc., St. John's, Newfoundland) were used aboard each vessel to monitor and record net height and width during fishing operations. Net width was measured as the distance between two sensors attached immediately forward of the connection of the upper breastline to the dandyline, and net height was measured from the headrope to the seafloor bottom. Estimates of mean net width for each tow were used in calculations of the area swept per tow (Rose and Walters 1990). For tows without observed net width values, a mean net width-inverse scope regression (Zar 1999) was calculated for each vessel (Rose and Walters 1990; Fig. 4).

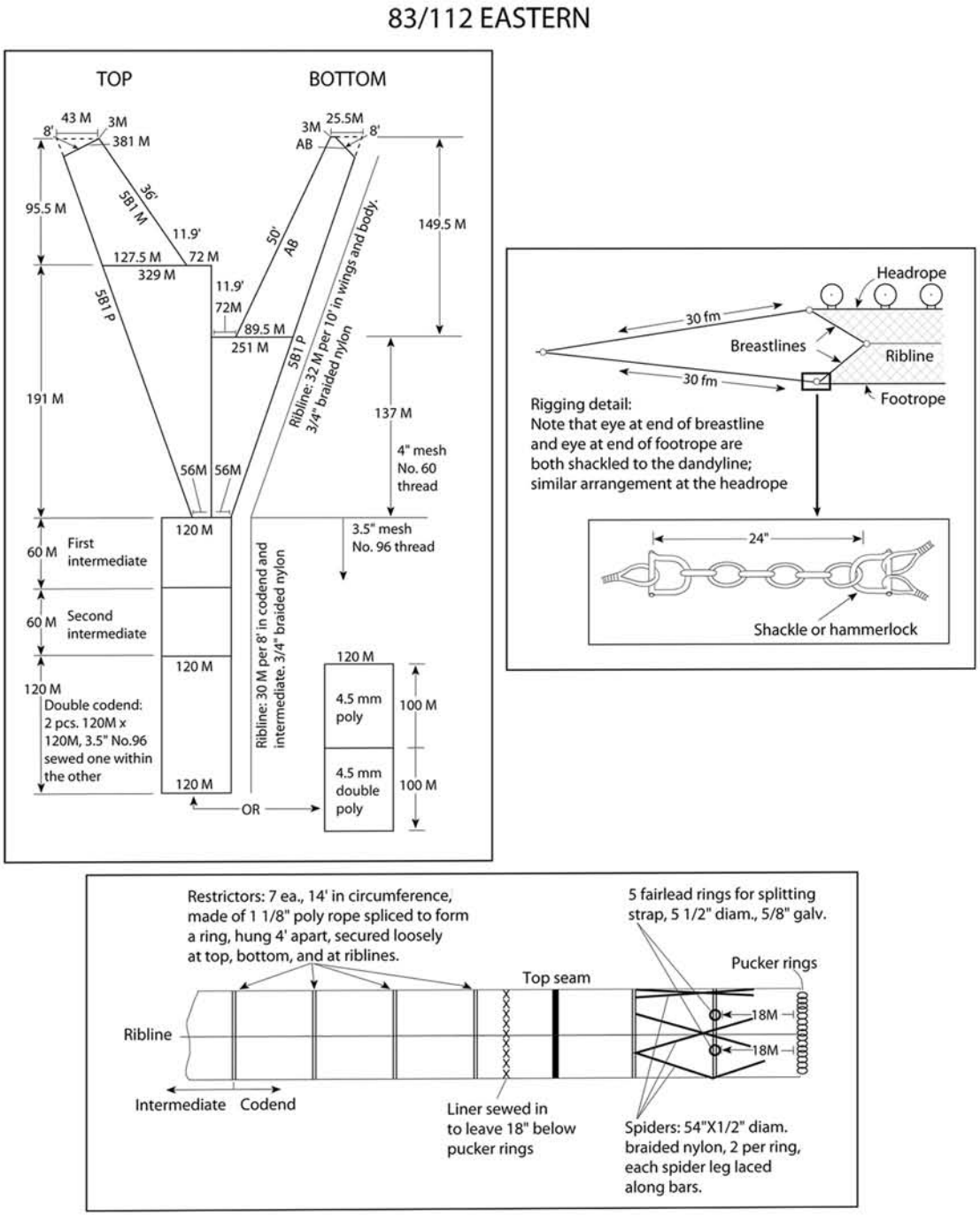

Figure 3. -- Schematic diagram of the 83/112 Eastern otter trawl gear used during the 2010 eastern and northern Bering Sea shelf bottom trawl survey.

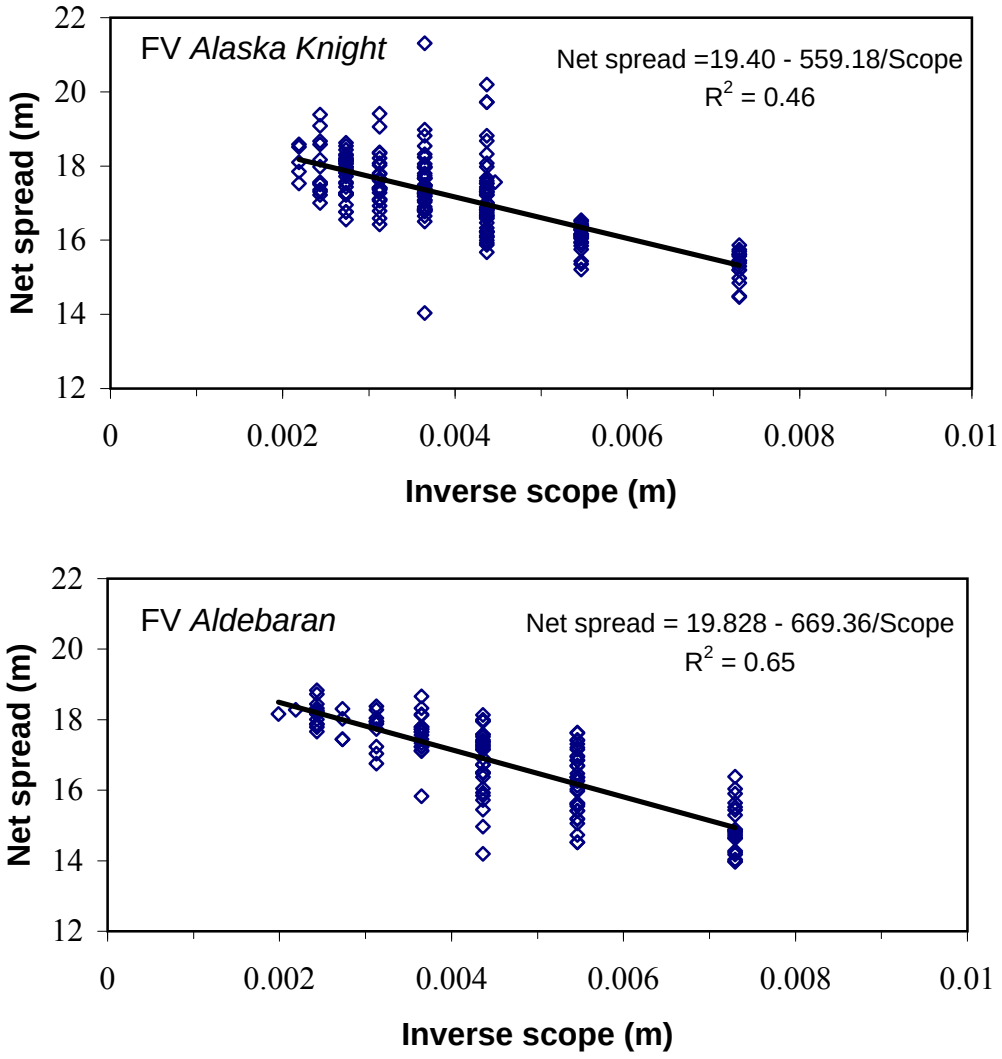

Figure 4. -- Net spread-inverse scope (wire-out) relationship for each vessel participating in the 2010 eastern and northern Bering Sea bottom trawl survey. No analysis was necessary for the FV *Vesteraalen* because all trawl hauls had valid net spread measurements.

EBS Sampling Logistics and Stratification Scheme

Both the *Alaska Knight* and *Aldebaran* conducted the standard EBS shelf survey charters beginning in Dutch Harbor, Alaska, on 3 June 2010. Survey trawl sampling of the EBS shelf began in eastern Bristol Bay and proceeded westward to the shelf edge (Fig. 2). The progression from east to west was established in response to movements of yellowfin sole and perhaps other species, which may be migrating eastward during the course of the survey (Smith and Bakkala 1982). The *Aldebaran* completed the standard EBS survey on 29 July after returning to Bristol Bay to resurvey 23 stations in an effort to assess the availability of mature red king crab to the survey after bottom temperatures increased from the original sampling of those stations (Fig. 2). The *Alaska Knight* completed sampling for the standard EBS survey on 4 August.

For catch analysis, the EBS shelf was divided into 12 strata bounded by the 50-m, 100-m, and 200-m isobaths, a geographic stratum line separating the northwest and southeast shelf, and localized high-density strata in the regions around St. Matthew and Pribilof Islands (Fig. 2). This stratification scheme reflects the differences observed in Bering Sea groundfish distribution across the oceanographic domains, and the intention of the design was to reduce the variances of population and biomass estimates (Bakkala 1993). The purpose of high-density sampling in Strata 32, 42, 43, and 62 was to reduce variance estimates for blue king crab. Sampling density ranged from one station per 775 km^2 (Stratum 42) to one per 1,496 km^2 (Stratum 82) and the sampling density for the entire EBS shelf was one station per 1,311 km^2 (Table 1).

Table 1. -- Stratum areas and sampling densities for the 2010 bottom trawl survey of the eastern Bering Sea (EBS) shelf and the northern Bering Sea (NBS) shelf.

Stratum	Representative area (km^2)	Stations successfully sampled	Sampling density (km^2 / station)
EBS inner shelf			
10	77,871	58	1,343
20	41,027	31	1,323
EBS middle shelf			
31	94,526	69	1,370
32	8,774	8	1,097
41	62,703	44	1,425
42	24,011	31	775
43	21,108	22	959
82	17,954	12	1,496
EBS outer shelf			
50	38,792	26	1,492
61	88,134	60	1,469
62	6,429	7	918
90	11,568	8	1,446
Total EBS	492,898	376	1,311
NBS shelf			
70	79,261	58	1,367
71	82,594	56	1,475
81	38,352	28	1,370
Total NBS	200,207	142	1,410
Total EBS and NBS	693,105	518	1,338

NBS Sampling Logistics and Stratification Scheme

Survey trawl sampling of the NBS shelf was conducted in late July and early August. The *Vesteraalen* conducted sampling in the NBS from 23 July to 15 August, the *Aldebaran* from 30 July to 8 August, and the *Alaska Knight* from 4 August to 8 August.

The NBS shelf was divided into three strata: one including the area north of St. Lawrence Island and Norton Sound and two others south of St. Lawrence Island separated by the 50-m isobath (Fig. 2). Sampling density was 1,367 km^2 /station for Stratum 70, 1,475 km^2 /station for Stratum 71, 1,475 km^2 /station for Stratum 81, and 1,410 km^2 /station for the total NBS (Table 1).

Standard Sampling Procedures

Detailed sampling procedures used in RACE eastern Bering Sea assessment surveys are described in detail by Wakabayashi et al. (1985) and Stauffer (2004). A brief summary of these procedures is described below.

Samples were collected by trawling near the center of each grid square (or grid circle, in the case of high-density strata) for a target fishing time of 30 minutes at a speed of 1.54 m/sec (3 knots). If the seafloor appeared to be untrawlable at the specified location, the nearest trawlable site within the same grid square was used. If the net was damaged or impacted by bottom structure during the trawl, the catch was discarded and a new sample obtained if suitable bottom was found.

Catches estimated to be less than approximately 1,150 kg (2,500 lb) were entirely sorted and enumerated, while larger catches were weighed in aggregate and subsampled before sorting. After sorting subsampled catches, individual species were weighed in aggregate and counted, and these weights and numbers were expanded to the total catch.

Fishes and invertebrates were identified and sorted to the lowest taxonomic level practicable. Due to low abundance (believed to be < 1%) of southern rock sole (*Lepidopsetta bilineata*) in the EBS and its morphological similarities to northern rock sole (*L. polyxystra*; Orr and Matarese 2000), these species were also grouped by genus (*Lepidopsetta* spp.) for this report.

Catch weights and numbers by species or species group were either estimated directly when subsampled, or estimated by extrapolating the proportion in the subsample to that of the entire catch weight. All Pacific halibut (*Hippoglossus stenolepis*), Greenland turbot (*Reinhardtius hippoglossoides*), skates (Rajidae), and commercial crab species were weighed and enumerated from each catch. Additional fish or invertebrate species (e.g., large sculpins, sharks, or octopus) were also completely sorted from the catch in most cases.

Random samples of each fish species retained for length measurements were representative of the sex and size composition in the catch. The greater the size range of a fish species in the sample, the greater the number of that species were retained in the random subsample for length measurements by sex, up to a maximum of about 300 specimens per species. Fish lengths were collected for each commercially important groundfish species and many co-occurring species (Table 2). The sex of each fish from a sample was determined and then fish from the sample were measured to the nearest 1.0 centimeter (fork or total length). Unless retained for biological sampling by the International Pacific Halibut Commission (IPHC), Pacific halibut were measured upon capture and immediately returned to the sea in an effort to reduce mortality; weights of all Pacific halibut were estimated using an IPHC length-weight regression.

Table 2. -- Number of length measurements by species and stratum made during the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) shelf bottom trawl surveys.

	EBS Stratum												NBS Stratum			
Common name	**10**	**20**	**31**	**32**	**41**	**42**	**43**	**50**	**61**	**62**	**82**	**90**	**70**	**71**	**81**	**Total**
Alaska plaice	3,468	2,992	2,376	15	1,589	534	328	0	8	38	18	0	5,356	2,203	862	19,787
Alaska skate	477	476	688	68	438	343	205	41	570	149	72	83	434	18	114	4,176
Aleutian skate	0	0	0	0	0	0	0	11	3	0	0	0	0	0	0	14
Arctic cod	192	1,671	45	0	1,556	161	500	0	46	35	731	184	1,428	2,586	1,505	10,640
arrowtooth flounder	201	0	1,669	305	294	689	152	3,313	3,620	273	0	85	0	0	0	10,601
Atka mackerel	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Bering flounder	3	35	64	0	1,037	12	313	0	88	45	1,276	380	1,174	526	2,021	6,974
Bering skate	0	0	27	5	0	7	0	115	102	0	0	12	0	0	0	268
big skate	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
bigmouth sculpin	0	0	14	10	16	21	25	16	110	14	0	4	0	0	0	230
blackspotted rockfish	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6
butter sole	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
butterfly sculpin	2	7	1	0	49	32	35	0	0	0	51	0	89	162	18	446
chinook salmon	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
chum salmon	0	0	0	1	0	0	0	0	1	0	0	0	2	0	5	9
coho salmon	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Dover sole	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	10
dusky rockfish	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
flathead sole	286	3	3,453	345	391	718	217	3,313	3,692	150	41	22	0	0	0	12,631
great sculpin	106	16	95	9	32	25	60	2	61	26	7	11	6	36	1	493
Greenland turbot	1	0	37	12	554	107	539	0	709	398	413	429	4	0	103	3,306
harlequin rockfish	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Kamchatka flounder	28	0	428	107	50	81	117	1,021	1,023	207	0	156	0	0	0	3,218
longhead dab	821	202	1	0	0	0	0	0	0	0	0	0	150	170	0	1,344
marbled eelpout	0	6	0	0	23	0	6	0	0	0	154	0	97	11	974	1,271
northern rock sole	7,405	1,763	6,657	777	411	1,538	482	35	174	112	6	5	830	299	10	20,504
northern rockfish	0	0	0	0	0	0	0	21	4	0	0	0	0	0	0	25
Pacific cod	3,568	514	3,718	371	1,102	2,291	775	553	1,611	188	96	78	139	118	9	15,131
Pacific halibut	1,615	325	1,011	75	77	313	29	55	185	14	1	2	210	19	6	3,937
Pacific ocean perch	0	0	0	0	0	0	0	16	29	0	0	0	0	0	0	45
Pacific sleeper shark	0	0	1	0	1	0	0	0	2	0	0	0	0	0	0	4
pink salmon	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1

Table 2. -- Continued.

	EBS Stratum												NBS Stratum			
Common name	**10**	**20**	**31**	**32**	**41**	**42**	**43**	**50**	**61**	**62**	**82**	**90**	**70**	**71**	**81**	**Total**
plain sculpin	1,058	678	17	0	31	0	20	0	1	0	1	0	571	560	6	2,943
prowfish	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
rex sole	3	0	49	0	2	1	0	601	384	0	0	0	0	0	0	1,040
rougheye rockfish	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3
saffron cod	0	54	0	0	0	0	1	0	0	0	0	0	1,017	2,089	0	3,161
Sakhalin sole	0	3	0	0	21	0	4	0	0	0	27	0	849	270	466	1,640
shortfin eelpout	0	0	1	0	25	35	118	120	846	239	4	324	0	0	2	1,714
southern rock sole	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
spiny dogfish	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
starry flounder	585	63	76	0	0	0	0	0	0	0	0	0	28	518	0	1,270
walleye pollock	733	590	3,895	639	2,437	2,131	2,482	734	6,132	1,098	915	1,206	701	126	277	24,096
warty sculpin	4	6	11	2	67	61	104	0	0	0	1	0	131	2,945	2	3,334
wattled eelpout	0	0	146	1	315	50	200	1	144	73	437	152	9	110	241	1,879
whiteblotched skate	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
yellow Irish lord	2	2	14	67	2	186	1	6	12	2	0	0	0	0	0	294
yellowfin sole	8,206	4,577	5,121	32	1,237	1,204	239	0	0	0	3	0	7,731	2,981	889	32,220
													EBS and NBS total			**188,698**

Sagittal otoliths were collected from 11 fish species in the EBS and 6 fish species in the NBS (Table 3). In the EBS, three otolith pairs per sex per centimeter interval per vessel in both the northwest stratum and southeast stratum (up to 12 pairs total) were collected for Pacific cod, Alaska plaice (*Pleuronectes quadrituberculatus*), arrowtooth flounder (*Atheresthes stomias*), northern rock sole, flathead sole (*Hippoglossoides elassodon*), and Greenland turbot. Five otolith pairs per sex per centimeter interval per vessel in both the northwest stratum and southeast stratum (up to 20 pairs total) were collected for Bering flounder (*Hippoglossoides robustus*), starry flounder (*Platichthys stellatus*) and yellowfin sole. Otoliths from all Pacific halibut collected aboard the *Aldebaran* were sampled by the IPHC for population and growth analyses. For walleye pollock otolith sampling, the eastern Bering Sea was divided into low- and high-density strata based on historical density data and a depth contour of approximately 70 m. Otoliths were collected from all hauls in which the total number of walleye pollock was 20 or more. Walleye pollock samples for otolith collection were selected at random from fish samples prior to sex determination. Six pairs of otoliths were collected in high-density strata and four in low-density strata. In addition, if 20 or more juvenile walleye pollock (< 20-cm) were present in a sample, two additional otolith pairs were taken from a random sample of those juveniles. Individual fish weights were collected for all species for which age structures were taken. Otoliths for groundfishes were preserved in 50% glycerol-thymol solution.

Surface and bottom water temperatures, as well as temperature and depth profiles, were recorded at 1-second intervals at each station using a Sea-Bird SBE-39 datalogger (Sea-Bird Electronics Inc., Bellevue, WA) attached to the headrope of the trawl. Depth to bottom was obtained by adding net height to headrope depth.

Table 3. -- Number of fish from which age structures (otoliths) were collected by species and stratum during the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) shelf bottom trawl survey.

	EBS Stratum												NBS Stratum			
Common name	**10**	**20**	**31**	**32**	**41**	**42**	**43**	**50**	**61**	**62**	**82**	**90**	**70**	**71**	**81**	**Total**
Alaska plaice	181	144	149	0	112	22	15	0	4	0	0	0	0	0	0	627
arrowtooth flounder	28	0	109	0	30	83	0	175	283	0	0	0	0	0	0	708
Bering flounder	2	23	41	0	174	10	18	0	3	0	110	35	183	129	0	873
flathead sole	21	0	258	46	28	76	0	71	184	0	0	0	0	0	0	684
Greenland turbot	1	0	24	5	68	28	11	0	128	39	7	52	4	0	23	390
northern rock sole	179	112	83	20	36	42	41	0	13	0	0	0	0	0	0	526
Pacific cod	312	109	212	0	195	130	91	43	200	0	9	0	73	97	6	1,477
Pacific halibut[a]	833	238	462	20	6	84	0	26	63	0	0	0	206	18	2	1,958
starry flounder	170	13	32	0	0	0	0	0	0	0	0	0	0	0	0	215
walleye pollock	77	56	283	48	145	155	126	42	332	54	40	58	26	4	22	1,468
yellowfin sole	296	262	158	0	24	87	14	0	0	0	0	0	187	151	27	1,206
													EBS and NBS total			**10,132**

[a]International Pacific Halibut Commission (IPHC) manages and analyzes age structure collection.

Catch Data Analysis

Trawl survey catch data were used to estimate 1) relative abundance; 2) population biomass; 3) population numbers, and 4) population abundance by size class. A brief description of the procedures used in the analysis of RACE Bering Sea survey data follows (for a detailed description see Wakabayashi et al. 1985). Some species were grouped by family for catch data analysis because of their limited commercial value or uncertain identification.

Mean catch per unit effort (CPUE) values for each species were calculated in kilograms per hectare (1 ha = 10,000 m^2) and number of fish per hectare for each stratum; area swept (hectares) was computed as the distance towed multiplied by the mean net width (Alverson and Pereyra 1969). Mean CPUE values were calculated for individual strata and for the overall survey area. Biomass and population estimates were derived for each stratum by multiplying the stratum mean CPUE by the stratum area. Stratum totals were then summed to produce estimates for each of the strata and for the total survey area in the EBS and NBS.

For size composition estimates, the proportion of fish at each length interval (from subsamples at each station), weighted by CPUE (number of fish/ha), was expanded to the stratum population. Stratum abundance-at-length estimates were summed for the total estimated size composition for the overall survey area in both the EBS and NBS.

Except for Pacific halibut, otolith samples collected during the survey were read for age estimates by staff of the Age and Growth Program of the AFSC's Resource Ecology and Fisheries Management (REFM) Division. The most current information about age, growth, and population analyses are presented in the 2010 NPFMC Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Region.

Additional Research Projects

In addition to the survey operations, numerous special research projects and collections were undertaken during the 2010 survey (Table 4). Six projects were collection requests for either photos or specimens of fishes or crabs for educational outreach and reference material. Other projects conducted for the RACE Division included studies of 1) summer zooplankton biomass; 2) acoustic data collection for augmenting the midwater assessment of walleye pollock; 3) survey trawl catchability of snow crab in cooperation with the Bering Sea Fisheries Research Foundation (BSFRF); 4) Bering flounder reproductive biology; 5) collection of *in situ* light intensity measurements; 6) characterization of the benthic infauna community; 7) visual monitoring for bitter crab and black mat syndromes; and 8) Tanner crab stomach contents. The REFM Division's special study projects included: 1) a short-tailed albatross survey; 2) octopus identification and collections of individual weights; 3) collection of data on trophic interactions and feeding ecology of commercial fishes (Table 5); and 4) whole Arctic cod collections. Projects from outside the AFSC included 1) collection of biological and oceanographic data for the Bering Sea Integrated Ecosystem Research Program (BSIERP) and the Pacific Marine Environmental Laboratory (PMEL); 2) zoarcoid collections for Virginia Institute of Marine Science (VIMS); 3) reproductive potential of snow and Tanner crabs for ADF&G; and 4) genetic population structure of snow crab for University of Alaska, Fairbanks. Data for additional research projects were collected at sea and disseminated to the requesting principal investigator(s). To acquire the details of any special project or collection, please contact the investigator(s) designated in Table 4.

Table 4. -- Special projects and collections undertaken during the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey.

Project title	Principal Investigator(s)	Agency
Image collection of survey operations for use in communicating science	R. Reuter	AFSC[1]
Summer zooplankton biomass on the shelf	J. Napp	AFSC RACE[2]
Pollock biomass acoustic data collection	T.Honkalehto, P. Ressler	AFSC RACE
Bering flounder reproductive biology	J. Stark	AFSC RACE
Phylogenetics, speciation rate, and trait diversification of sculpins	J. Orr, B. Knope	AFSC RACE
Outreach/Fall Fishermen's Festival fish collection	J. Conner	AFSC RACE
Assessing the effect of light intensity and penetration on the distribution and behavior of walleye pollock	S. Kotwicki	AFSC RACE
Crab and survey operations photos	J. Haaga	AFSC RACE
Photos of assorted fishes	J. Hoff, M. Love	AFSC RACE
Bitter Crab Syndrome in north Pacific *Chionoecetes* spp.	F. Morado	AFSC RACE
Pathological specimen vouchers	P. Jensen, F. Morado	AFSC RACE
Tanner crab stomach contents	K. Swiney	AFSC RACE
Product quality reference manual	F. Morado, V. Lowe	AFSC RACE
Visual monitoring for Bitter Crab Syndrome and Black Mat Syndrome in north Pacific *Chionoecetes* sp.	F. Morado, R. Foy	AFSC RACE
Trawl selectivity of opilio crab	K. Weinberg	AFSC RACE, BSFRF[3]
Characterization of benthic infauna community for modeling essential fish habitat in the EBS	C.Yeung, M.S. Yang	AFSC RACE/REFM[4]
Short-tailed albatross sightings	S. Fitzgerald	AFSC REFM
Collection of whole arctic cod	O. Ormseth	AFSC REFM
Trophic interactions and feeding ecology of eastern Bering Sea shelf fishes	K. Aydin, T. Buckley	AFSC REFM
Octopus identification and individual weights	E. Conners	AFSC REFM
Food habits reference collection	J. Thomason	AFSC NMML[5]
BSIERP[6] oceanographic sampling	N. Cokelet	PMEL[7]
Molecular species identification of deepwater corals	E. Berntson	NWFSC[8]
Collection of zoarcoid fishes	E. Hilton	VIMS[9]
Reproductive potential of snow and tanner crabs	L. Slater, J. Webb	ADF&G[10]
Genetic population structure of *Chionoecetes opilio*	G. Albrecht	UAF[11]
Pacific halibut biological data collection	L. Sadorus	IPHC[12]

[1]Alaska Fisheries Science Center, Seattle, WA;[2]Resource Assessment and Conservation Engineering Division;

[3]Bering Sea Fisheries Research Foundation, Seattle, WA; [4]Resource Ecology and Fisheries Management Division;

[5]National Marine Mammal Laboratory; [6]Bering Sea Integrated Ecosystem Research Program;

[7]Pacific Marine Environmental Laboratory, Seattle, WA; [8]Northwest Fisheries Science Center, Seattle, WA;

[9]Virginia Institute of Marine Science, Gloucester Point, VA; 10Alaska Department of Fish and Wildlife, Kodiak, AK;

[11]University of Alaska Fairbanks, AK; [12]International Pacific Halibut Commission, Seattle, WA

Table 5. -- Stomach and pathobiology samples collected in the eastern and northern Bering Sea continental shelf during the 2010 bottom trawl survey.

Eastern Bering Sea		
Fish common name	Stom.	Path.
Alaska skate	0	1
Arctic cod	69	0
arrowtooth/Kamchatka flounder	664	25
Bairdi Tanner crab	0	346
Bering flounder/flathead sole	0	65
blue king crab	0	176
butterfly sculpin	153	0
great sculpin	147	0
marbled eelpout	6	0
miscellaneous species	2	65
northern rocksole	0	31
opilio Tanner crab	0	1,107
Pacific cod	1,229	32
Pacific halibut	733	0
plain sculpin	193	0
red king crab	0	11
starry flounder	29	0
warty sculpin	119	0
wattled eelpout	6	0
yellow Irish lord	49	0
yellowfin sole	0	30
Totals	**3,399**	**1,889**

Northern Bering Sea		
Fish common name	Stom.	Path.
antlered sculpin	70	0
Arctic alligatorfish	26	0
Arctic cod	250	0
Arctic staghorn sculpin	85	0
Bering flounder/flathead sole	3	0
blackline prickleback	27	0
butterfly sculpin	95	0
capelin	14	0
eyeshade sculpin	17	0
great sculpin	11	0
marbled eelpout	194	0
miscellaneous species	34	2
northern rocksole	13	0
opilio Tanner crab	0	241
Pacific cod	25	0
Pacific cod	79	0
Pacific halibut	78	0
Pacific herring	24	0
Pacific sand lance	10	0
pimpled lumpsucker	4	0
plain sculpin	117	0
polar eelpout	36	0
rainbow smelt	101	0
ribbed sculpin	11	0
saffron cod	251	0
Sakhalin sole	75	0
slender eelblenny	124	0
starry flounder	54	0
stout eelblenny	28	0
threaded sculpin	86	0
variegated snailfish	85	0
veteran poacher	27	0
walleye pollock	220	0
warty sculpin	97	0
wattled eelpout	60	0
whitespotted greenling	13	0
yellow Irish lord	0	0
Totals	**2,444**	**243**

Results and Discussion

All 376 of the EBS stations were successfully sampled but only 142 of the 145 NBS stations were successfully sampled (Fig. 2). One NBS station had to be abandoned because it was too shallow for safe trawl operations, and two other stations were attempted once and then abandoned because it was concluded that further attempts at trawling within the grid cell would have likely resulted in significant gear damage. Haul data for successfully trawled stations used in the analyses are listed in Appendices A1 to A3 along with information about each station, such as position, tow parameters (net width, depth, distance fished, and duration of haul), time, and environmental measurements (surface and gear temperatures) for each vessel.

Ocean Conditions

Sea surface temperatures recorded during the survey ranged from 0.5° to 17.7°C (Fig. 5). In the EBS south of 60°N, surface temperatures increased from east to west across the shelf. Surface temperatures in the NBS were generally higher and above 10°C in Norton Sound. Bottom temperatures ranged from –1.6° to 12.3°C (Fig. 6) with warmer bottom temperatures (> 3.0°C) occurring along the inner shelf from northern Bristol Bay to Norton Sound, and on the outer shelf south of 59°N.

Average surface and bottom temperatures on the EBS shelf show similar interannual variability (Fig. 7). The annual EBS shelf BT survey begins in the late spring soon after the seasonal ice has receded and a layer of cold bottom water (≤ 2°C) persists on the middle shelf. The size of the cold pool fluctuates inter-annually and on longer time scales, and its extent on the middle shelf is determined by the extent of seasonal ice cover the preceding winter as well as by other oceanographic and meteorological conditions (Wyllie-Echeverria and Wooster 1998).

Changes in the mean bottom temperature relative to the long-term average became more extreme starting in 1999, which was the coldest year. This was followed by a steady increase that resulted in an extended warm period lasting from 2001 to 2005 followed by an acute decrease and an extended cold period from 2006 to the present survey. Average surface (5.4°C) and bottom (1.4°C) water temperatures for the EBS shelf were slightly higher than in 2009, but well below the long-term means from 1982 to 2009 for the surface (6.6°C) and for the bottom (2.3°C; Fig. 7).

Species Composition

A total of 120 fish species representing 23 families and 74 genera were identified in the survey catches from both the EBS and NBS (Appendix C1). The EBS had a total of 101 fish species, 49 of which did not occur in the NBS. In comparison, the NBS had 71 total fish species, 19 of which did not occur in the EBS (Table 6). Seven of the 19 species only occurring in the NBS (Table 6) have only been documented north of 60°N (Mecklenburg et al. 2002).

Relative Abundance

The relative abundance of the 12 most common fishes in each the EBS and NBS are presented in Figure 8. The top 12 fish taxa in the EBS accounted for 74% (230 kg/ha) of total catch CPUE (312 kg/ha) and 97% of total fish CPUE (236 kg/ha), compared with the NBS where the top 12 fish taxa accounted for only 38% (59 kg/ha) of the total catch CPUE (147 kg/ha) and 94% of total fish CPUE (59 kg/ha).

The lower fish biomass in the NBS is consistent with results of a broader analysis of all survey years showing decreasing fish biomass with increasing latitude on the Bering Sea

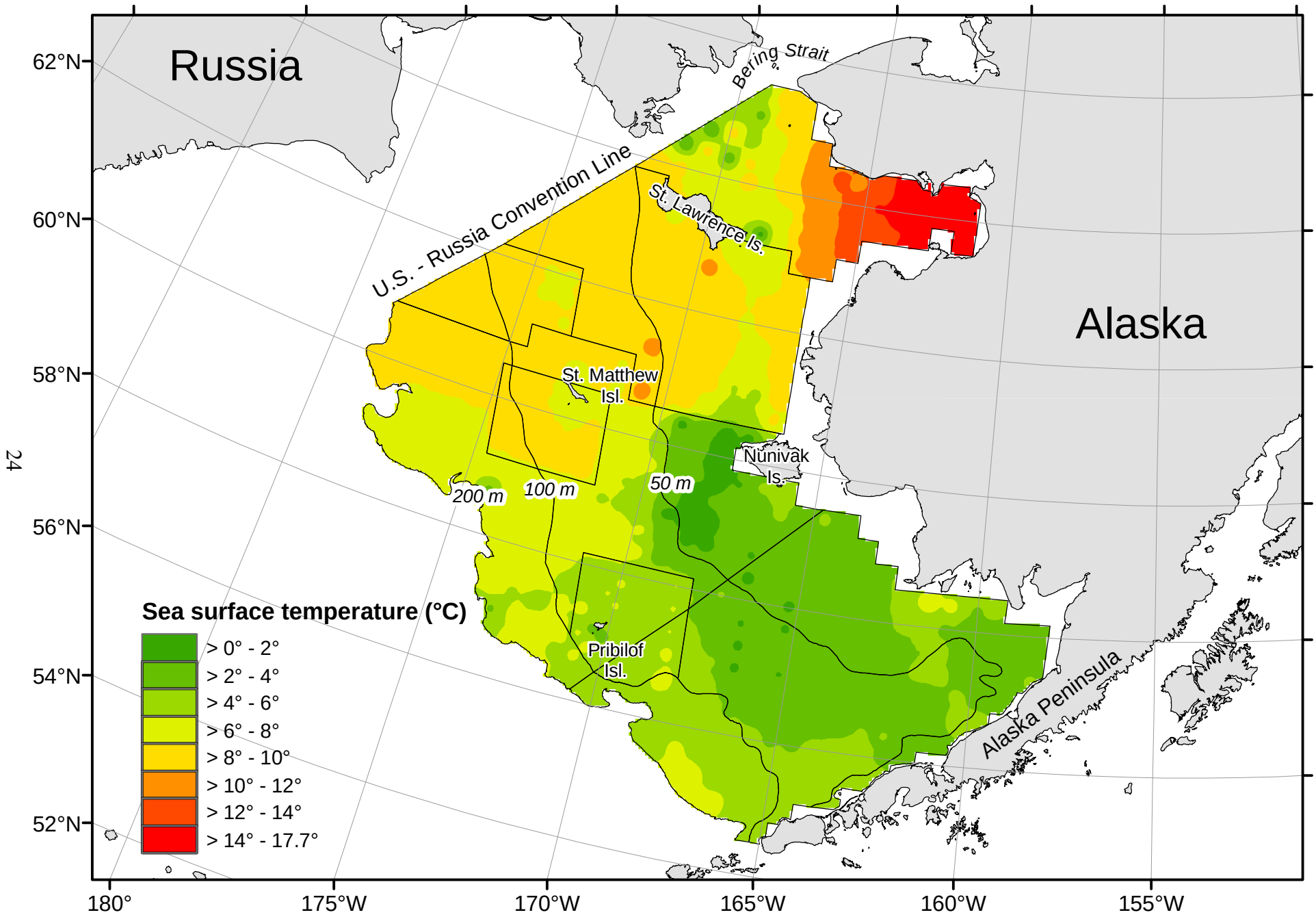

Figure 5. -- Map of the mean sea surface temperatures from the 2010 eastern and northern Bering Sea shelf bottom trawl survey.

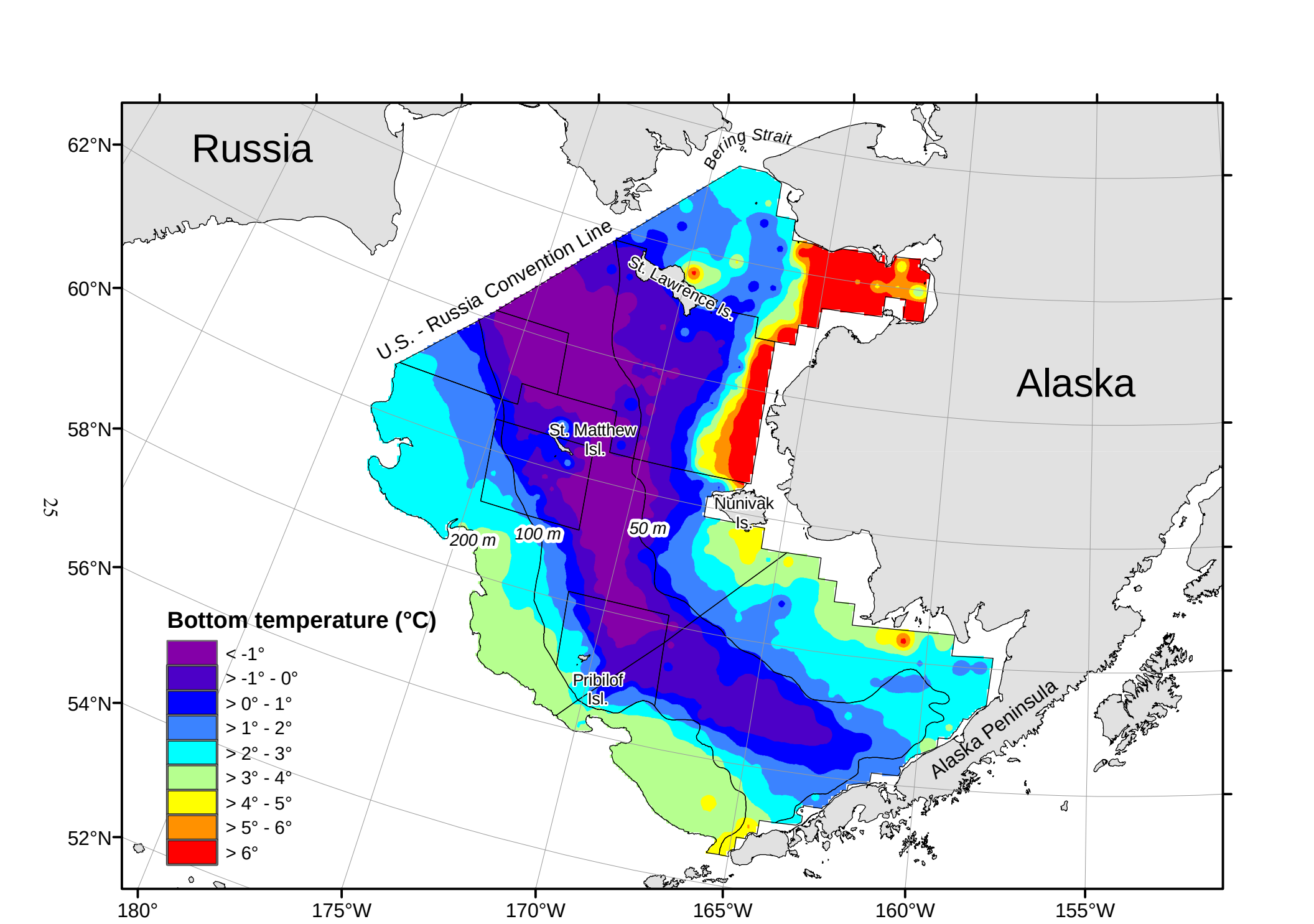

Figure 6. -- Map of the mean bottom temperatures from the 2010 eastern and northern Bering Sea shelf bottom trawl survey.

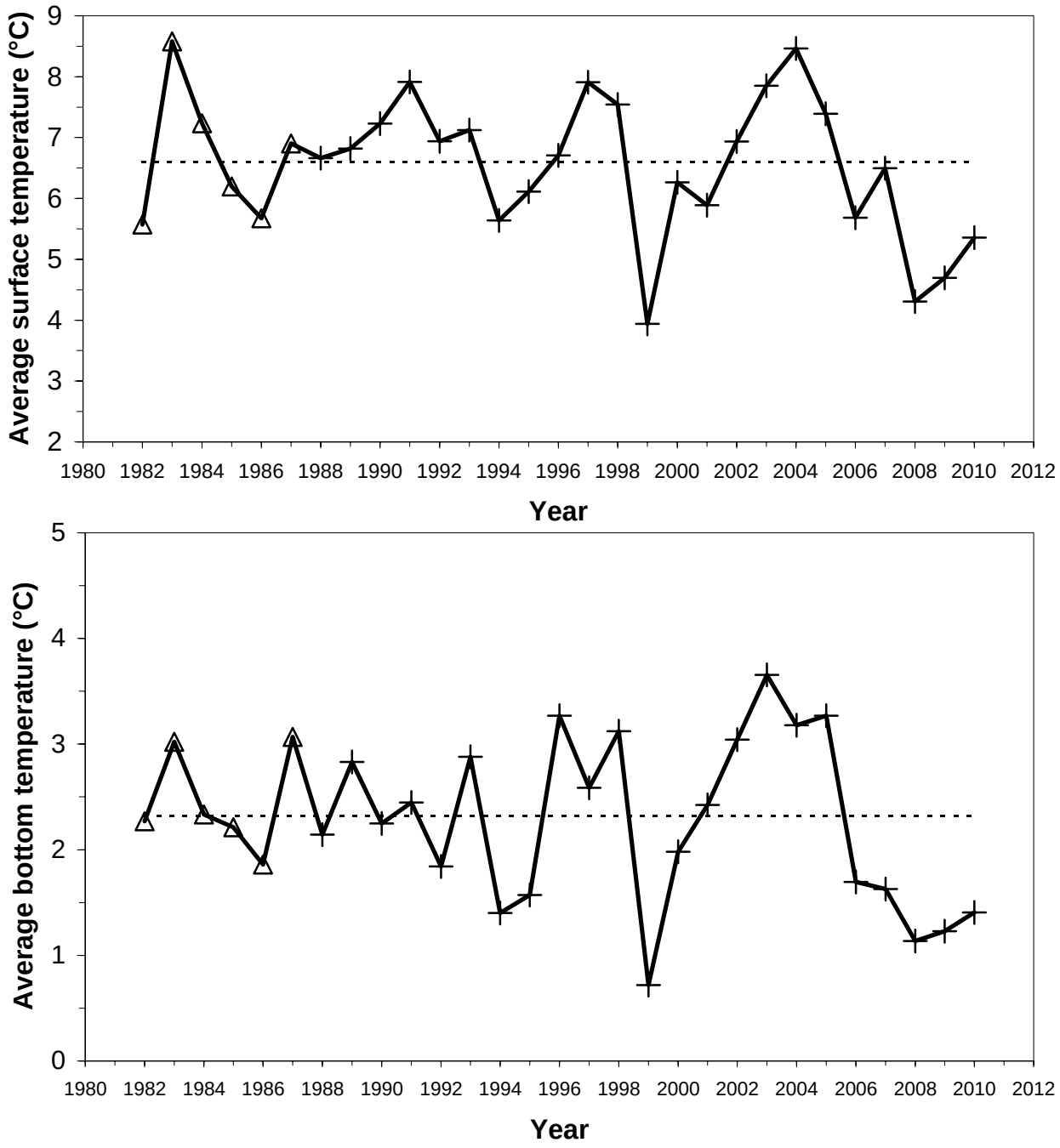

Figure 7. -- Time series of mean survey surface and bottom temperatures weighted by stratum based on expendable bathythermograph casts or digital dataloggers attached to the headrope during the eastern Bering Sea bottom trawl surveys from 1982 to 2010. Temperatures from the 2010 northern Bering Sea shelf are not included. The 1982-1987 means (triangles) are based on Strata 10-62 (see Fig. 2) and the 1988-2010 means also include Strata 80 and 92. The dashed lines represent the grand mean water temperatures for 1982-2009.

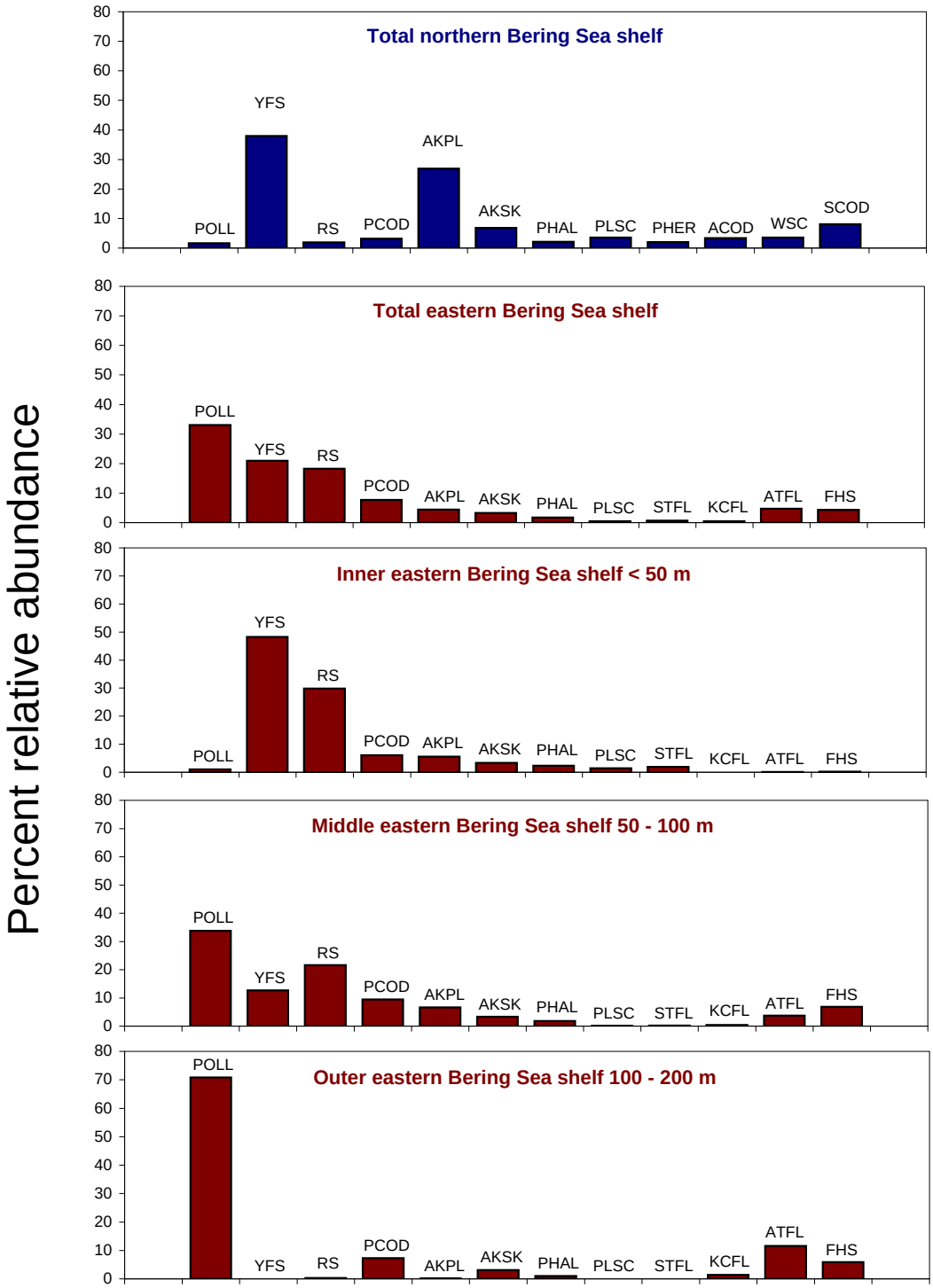

Figure 8. -- Percent relative abundance (weight) of the top 12 principal groundfish species for all depths combined in both the northern and eastern Bering Sea shelf bottom trawl survey, and by depth zone for the eastern Bering Sea shelf. Abbreviations for groundfishes are: POLL - walleye pollock, YFS - yellowfin sole, RS - rock sole, PCOD - Pacific cod, AKPL - Alaska plaice, PHAL - Pacific halibut, PLSC - plain sculpin, PHER - Pacific herring, ACOD -Arctic cod, WSC - warty sculpin, STFL - starry flounder, KCFL - Kamchatka flounder, ATFL - arrowtooth flounder, and FHS - flathead sole.

continental shelf (Stevenson and Lauth in review). The relative abundance of flatfishes and gadids were high in both the EBS and NBS, but the species comprising each taxonomic group and their proportion of the total biomass were different between the two areas. In the EBS, there were 16 different flatfish species that together comprised more than half of the total fish biomass (54%) with yellowfin sole (20%) and northern rock sole (18%) having the greatest proportions. This contrasted with the NBS where there were nine flatfish species with yellowfin sole (36%) and Alaska plaice (25%) making up a majority of the total fish biomass. Seven flatfish species that were present in the EBS were absent from catches in the NBS including arrowtooth flounder, Kamchatka flounder (*Atheresthes evermanni*), butter sole (*Isopsetta isolepis*), Dover sole (*Microstomus pacificus*), flathead sole, rex sole (*Glyptocephalus zachirus*) and southern rock sole (Table 6). One flatfish species, the Arctic flounder (*Liopsetta glacialis*), was only present in the NBS.

Walleye pollock and Pacific cod together comprised 40% of the total fish biomass in the EBS compared to only 5% in the NBS. The abundance of walleye pollock was relatively high in the EBS middle and outer shelf compared to the inner shelf and in the NBS where bottom depths are generally less than 50 m (Fig. 9). Unlike the EBS, two other gadids, Arctic cod (*Boreogadus saida*) and saffron cod (*Eleginus gracilis*), were among the 12 most abundant fish species in the NBS. For a descending rank of all organisms caught in each area, see Appendix B1 (EBS) and Appendix B2 (NBS).

Table 6. -- List of fish taxa from survey catches exclusive to the EBS (eastern Bering Sea) and NBS (northern Bering Sea). Taxa in bold case only documented north of 60°N (Mecklenburg et al. 2002).

Present in EBS but absent in NBS

Common name	Scientific name
Pacific lamprey	*Lampetra tridentata*
spiny dogfish	*Squalus acanthias*
Pacific sleeper shark	*Somniosus pacificus*
big skate	*Raja binoculata*
Bering skate	*Bathyraja interrupta*
Aleutian skate	*Bathyraja aleutica*
whiteblotched skate	*Bathyraja maculata*
arrowtooth flounder	*Atheresthes stomias*
Kamchatka flounder	*Atheresthes evermanni*
flathead sole	*Hippoglossoides elassodon*
Dover sole	*Microstomus pacificus*
rex sole	*Glyptocephalus zachirus*
southern rock sole	*Lepidopsetta bilineata*
butter sole	*Isopsetta isolepis*
sawback poacher	*Leptagonus frenatus*
northern spearnose poacher	*Agonopsis vulsa*
pygmy poacher	*Odontopyxis trispinosa*
gray starsnout	*Bathyagonus alascanus*
smooth alligatorfish	*Anoplagonus inermis*
fourhorn poacher	*Hypsagonus quadricornis*
searcher	*Bathymaster signatus*
northern sculpin	*Icelinus borealis*
purplegray sculpin	*Gymnocanthus detrisus*
hookhorn sculpin	*Artediellus pacificus*
darkfin sculpin	*Malacocottus zonurus*
longfin Irish lord	*Hemilepidotus zapus*
yellow Irish lord	*Hemilepidotus jordani*
scissortail sculpin	*Triglops forficata*
spectacled sculpin	*Triglops scepticus*
roughspine sculpin	*Triglops macellus*
spinyhead sculpin	*Dasycottus setiger*
sailfin sculpin	*Nautichthys oculofasciatus*
bigmouth sculpin	*Hemitripterus bolini*
Atka mackerel	*Pleurogrammus monopterygius*
toad lumpsucker	*Eumicrotremus phrynoides*
blotched snailfish	*Crystallichthys cyclospilus*
Okhotsk snailfish	*Liparis ochotensis*
salmon snailfish	*Careproctus rastrinus*
eulachon	*Thaleichthys pacificus*
chinook salmon	*Oncorhynchus tshawytscha*
pink salmon	*Oncorhynchus gorbuscha*
whitebarred prickleback	*Poroclinus rothrocki*
prowfish	*Zaprora silenus*
rougheye rockfish	*Sebastes aleutianus*
blackspotted rockfish	*Sebastes melanostictus*
Pacific ocean perch	*Sebastes alutus*
dusky rockfish	*Sebastes variabilis*
northern rockfish	*Sebastes polyspinis*
harlequin rockfish	*Sebastes variegatus*

Present in NBS but absent in EBS

Common name	Scientific name
Arctic flounder	*Liopsetta glacialis*
veteran poacher	***Podothecus veternus***
Arctic staghorn sculpin	***Gymnocanthus tricuspis***
hamecon	***Artediellus scaber***
brightbelly sculpin	*Microcottus sellaris*
belligerent sculpin	*Megalocottus platycephalus*
fourhorn sculpin	***Myoxocephalus quadricornis***
Arctic sculpin	***Myoxocephalus scorpioides***
hairhead sculpin	***Trichocottus brashnikovi***
antlered sculpin	*Enophrys diceraus*
smoothcheek sculpin	*Eurymen gyrinus*
coho salmon	*Oncorhynchus kisutch*
Arctic shanny	*Stichaeus punctatus*
snake prickleback	*Lumpenus sagitta*
pighead prickleback	*Acantholumpenus mackayi*
bearded warbonnet	*Chirolophis snyderi*
saddled eelpout	*Lycodes mucosus*
Canadian eelpout	***Lycodes polaris***
fish doctor	*Gymnelus viridis*

Biomass, Abundance, Distribution, CPUE, and Size Composition of Principal Species and Species Groups

Total demersal animal biomass for the EBS was estimated at 15.6 million metric tons (t) and for the NBS at 3.0 million t. In the EBS, the proportion of fishes (75%; Table 7a) was three times higher than invertebrates (25%; Table 7b); however, the converse was true for the NBS where the proportion of fishes (40%; Table 8a) was lower than invertebrates (60%; Table 8b). Pleuronectids dominated the fish biomass in both the EBS (6.3 million t) and NBS (0.8 million t), and gadids were the second most abundant fish group in both areas. Walleye pollock were the most abundant gadid in the EBS (Table 7a) and saffron cod the most abundant in the NBS (Table 8a). Echinoderms and crustaceans were the major invertebrate taxa comprising 17% of the total animal biomass in the EBS (Table 7b) and 40% in the NBS (Table 8b).

Survey results for major fish fauna are presented in maps of geographic distribution and abundance, plots of total abundance-at-size, and tables with estimates of biomass and population number. Major species presented include walleye pollock (Figs. 9-10 and Table 9a, b), Pacific cod (Figs. 11-12 and Table 10a, b), yellowfin sole (Figs. 13-14 and Table 11a, b), grouped northern and southern rock sole (Figs. 15-16 and Table 12a, b), flathead sole (Figs. 17-18 and Table 13a, b), Bering flounder (Figs. 19-20 and Table 14a, b), Alaska plaice (Figs. 21-22 and Table 15a, b), Greenland turbot (Figs. 23-24 and Table 16a, b), arrowtooth flounder (Figs. 25-26 and Table 17a, b), Kamchatka flounder (Figs. 27-28 and Table 18a, b), and Pacific halibut (Figs. 29-30 and Table 19a, b). Appendix D contains population estimates by sex and size class for all 11 of these fish species.

Summary of Results for Selected Major Eastern and Northern Bering Sea Fish Fauna

Walleye Pollock (*Theragra chalcogramma*)

Walleye pollock were captured at 82% of the stations sampled in the EBS and NBS. Catch rates were lowest in the inner and middle shelf, and highest north of 56°N and west of 170°W where bottom depths were greater than 70 m and bottom water temperatures were above -1°C (Fig. 9). The total estimated biomass of walleye pollock in the EBS was 3.74 million t (Table 9a), which was a 64% increase from the 2009 estimate of 2.28 million t. The higher biomass corresponded to a 56% increase in population size from 3.5 billion to 5.4 billion fish (Table 9b). The biomass and population size in the NBS were comparatively small with 21,000 t and 66 million fish.

One-year-old pollock, represented by lengths ranging from 10 to 20 cm, had a modal peak of 80 million in the EBS and 15 million in the NBS (Fig. 10). These 10-20 cm juveniles were mostly found at stations where catch rates were less than 75 kg/ha (Fig. 9) and they were generally segregated from larger adults (> 40 cm) in the middle and outer shelf. The abundance-at-size plot of pollock in both the NBS and EBS inner shelf shows a large mode of age-1 pollock followed by a large gap and then a small mode of much larger pollock having lengths greater than 60 cm (Fig. 10). Age-2 and age-3 pollock (length range of 20-40 cm) are generally underrepresented in survey trawl catches; however, relatively small modes for both year classes are present in the plot of abundance-at-size (Fig. 10).

Table 7a. -- Biomass estimates (t) for major fish species and groups taken during the 2010 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)							
					10	20	30	40	50	60	82	90
Gadidae (cods)												
Walleye pollock	3,737,878	±	23%	0.2400	27,735	8,932	578,742	810,264	155,991	1,969,316	67,406	119,491
Pacific cod	870,070	±	23%	0.0559	219,876	10,949	172,659	233,689	25,818	196,651	3,396	7,033
Other cods	23,036	±	95%	0.0015	232	4,798	27	16,721	0	60	978	221
Total cods	**4,630,985**	±	**19%**	**0.2973**	**247,844**	**24,679**	**751,428**	**1,060,674**	**181,809**	**2,166,027**	**71,780**	**126,745**
Anoplopomatidae												
Sablefish	0	±	0%	0.0000	0	0	0	0	0	0	0	0
Scorpaenidae (rockfish)												
Pacific ocean perch	345	±	21%	0.0000	0	0	0	0	142	202	0	0
Other rockfish	1,429	±	148%	0.0001	0	0	0	0	1,272	158	0	0
Total rockfish	**1,774**	±	**129%**	**0.0001**	**0**	**0**	**0**	**0**	**1,414**	**360**	**0**	**0**
Pleuronectidae (flatfishes)												
Yellowfin sole	2,367,843	±	24%	0.1520	1,591,892	228,469	434,612	112,857	0	0	13	0
Rock sole	2,065,062	±	19%	0.1326	1,069,753	56,414	489,049	441,504	675	7,511	102	54
Flathead sole	488,762	±	30%	0.0314	8,035	138	163,406	131,365	51,108	134,554	53	104
Bering flounder	11,852	±	23%	0.0008	63	372	89	5,038	0	1,047	3,375	1,867
Alaska plaice	498,009	±	19%	0.0320	103,527	106,872	120,089	165,069	0	1,816	636	0
Arrowtooth flounder	528,667	±	17%	0.0339	2,715	0	127,320	31,232	144,113	219,017	1	4,269
Kamchatka flounder	58,287	±	15%	0.0037	90	0	6,524	8,892	5,311	31,110	0	6,360
Greenland turbot	23,414	±	34%	0.0015	2	0	38	2,635	0	14,911	887	4,940
Pacific halibut	198,349	±	14%	0.0127	65,690	23,344	57,024	20,331	6,756	25,083	19	102
Other flatfish	93,727	±	49%	0.0060	78,925	4,847	9,885	31	0	0	40	0
Total flatfish	**6,333,973**	±	**23%**	**0.4067**	**2,920,692**	**420,456**	**1,408,037**	**918,954**	**207,963**	**435,049**	**5,126**	**17,696**
Clupeidae (Pacific herring)	34,197	±	155%	0.0022	2,752	31,102	91	80	0	19	147	5
Cottidae (sculpins)	174,987	±	18%	0.0112	54,013	16,113	32,974	44,053	3,259	22,718	493	1,364
Zoarcidae (eelpouts)	30,319	±	33%	0.0019	0	156	1,055	4,151	164	17,249	3,205	4,339
Osmeridae (smelts)	9,942	±	38%	0.0006	4,097	696	389	361	4,357	1	40	0
Agonidae (poachers)	19,120	±	25%	0.0012	4,064	2,296	7,143	4,984	541	81	3	9
Cyclopteridae (snailfishes and lumpsuckers)	4,121	±	30%	0.0003	36	5	359	2,073	5	648	712	283
Alaska skate	366,116	±	12%	0.0235	63,450	61,300	61,028	76,945	4,673	84,237	4,763	9,720
Other skates	19,203	±	34%	0.0012	0	0	4,658	307	5,913	7,223	1	1,102
Other fish	11,384	±	54%	0.0007	135	332	3,088	2,669	700	4,447	8	4
Total fish	**11,636,121**	±	**10%**	**0.7471**	**3,297,085**	**557,134**	**2,270,250**	**2,115,250**	**410,799**	**2,738,059**	**86,276**	**161,266**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 15,574,474 t.

Table 7b. -- Biomass estimates (t) for major invertebrate species and groups taken during the 2010 eastern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)							
					10	20	30	40	50	60	82	90
Crustacea												
Crabs	887,413	±	11%	0.0570	50,318	23,923	159,846	310,421	36,116	154,531	64,353	87,905
Shrimps	9,865	±	90%	0.0006	87	100	80	780	702	7,441	98	578
Other crustaceans	1,603	±	90%	0.0001	1,044	5	84	71	80	309	0	10
Total crustaceans	**898,881**	**±**	**10%**	**0.0577**	**51,449**	**24,028**	**160,010**	**311,272**	**36,897**	**162,282**	**64,451**	**88,493**
Mollusca												
Gastropoda (snails)	285,756	±	13%	0.0183	8,842	10,324	89,625	86,947	8,372	73,050	5,139	3,456
Pelecypoda (bivalves)	5,574	±	37%	0.0004	726	224	2,447	1,475	281	314	18	89
Squids	52	±	122%	0.0000	0	0	0	0	5	46	0	0
Octopuses	820	±	96%	0.0001	0	0	12	220	390	174	24	0
Other mollusks	18,790	±	74%	0.0012	312	160	5,378	4,090	41	7,647	677	487
Total mollusks	**310,991**	**±**	**14%**	**0.0200**	**9,880**	**10,708**	**97,462**	**92,732**	**9,088**	**81,230**	**5,858**	**4,033**
Echinodermata												
Asteroidea (sea stars)	1,351,364	±	13%	0.0868	322,912	152,548	192,492	208,996	1,198	90,596	4,343	2,428
Ophiuroidea (brittle stars)	315,238	±	41%	0.0202	9,848	2,204	59,408	53,310	1,389	182,150	6,255	674
Echinoidea (sea urchin)	49,056	±	81%	0.0031	919	0	18,557	21,096	6,819	1,644	6	14
Holothuroidea (sea cucumbers)	11,558	±	94%	0.0007	2,524	0	2,613	6,404	15	1	1	0
Total echinoderms	**1,727,216**	**±**	**13%**	**0.1109**	**336,203**	**154,752**	**273,071**	**289,806**	**9,421**	**274,392**	**10,605**	**3,116**
Ascidiacea	540,357	±	34%	0.0347	98,358	20,406	204,162	217,390	14	12	14	0
Porifera (sponges)	174,510	±	103%	0.0112	563	83	166,797	4,744	359	1,964	0	0
Coelenterata	278,743	±	15%	0.0179	29,542	2,437	127,485	58,986	21,658	24,207	8,399	6,030
Other invertebrates	7,656	±	37%	0.0005	977	1,221	1,246	1,382	309	2,474	39	8
Total invertebrates	**3,938,354**	**±**	**9%**	**0.2529**	**526,972**	**213,634**	**1,030,232**	**976,311**	**77,746**	**546,561**	**89,366**	**101,679**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 15,574,474 t.

Table 8a. -- Biomass estimates (t) for major fish species and groups taken during the 2010 northern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)		
					70	71	81
Gadidae (cods)							
Walleye pollock	21,124	±	17%	0.0071	1,969,316	67,406	119,491
Pacific cod	29,091	±	18%	0.0098	196,651	3,396	7,033
Other cods	128,701	±	19%	0.0432	60	978	221
Total cods	**178,916**	±	**14%**	**0.0600**	**2,166,027**	**71,780**	**126,745**
Anoplopomatidae							
Sablefish	0	±	0%	0.0000	0	0	0
Scorpaenidae (rockfish)							
Pacific ocean perch	0	±	0%	0.0000	202	0	0
Other rockfish	0	±	0%	0.0000	158	0	0
Total rockfish	**0**	±	**0%**	**0.0000**	**360**	**0**	**0**
Pleuronectidae (flatfishes)							
Yellowfin sole	427,591	±	8%	0.1434	0	13	0
Rock sole	21,245	±	14%	0.0071	7,511	102	54
Flathead sole	0	±	0%	0.0000	134,554	53	104
Bering flounder	12,354	±	8%	0.0041	1,047	3,375	1,867
Alaska plaice	303,195	±	8%	0.1017	1,816	636	0
Arrowtooth flounder	0	±	0%	0.0000	219,017	1	4,269
Kamchatka flounder	0	±	0%	0.0000	31,110	0	6,360
Greenland turbot	124	±	15%	0.0000	14,911	887	4,940
Pacific halibut	23,327	±	19%	0.0078	25,083	19	102
Other flatfish	19,315	±	13%	0.0065	0	40	0
Total flatfish	**807,150**	±	**9%**	**0.2707**	**435,049**	**5,126**	**17,696**
Clupeidae (Pacific herring)	22,987	±	31%	0.0077	19	147	5
Cottidae (sculpins)	78,598	±	14%	0.0264	22,718	493	1,364
Zoarcidae (eelpouts)	11,084	±	7%	0.0037	17,249	3,205	4,339
Osmeridae (smelts)	16,490	±	12%	0.0055	1	40	0
Agonidae (poachers)	416	±	22%	0.0001	81	3	9
Cyclopteridae (snailfishes and lumpsuckers)	3,317	±	12%	0.0011	648	712	283
Alaska skate	76,934	±	15%	0.0258	84,237	4,763	9,720
Other skates	14	±	38%	0.0000	7,223	1	1,102
Other fish	3,438	±	23%	0.0012	4,447	8	4
Total fish	**1,199,344**	±	**5%**	**0.4022**	**2,738,059**	**86,276**	**161,266**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 2,982,193 t.

Table 8b. -- Biomass estimates (t) for major invertebrate species and groups taken during the 2010 northern Bering Sea bottom trawl survey.

Taxon	Estimated total biomass (t)[a] and 95% confidence			Proportion of total animal biomass[b]	Estimated biomass by stratum (t)		
					70	71	81
Crustacea							
Crabs	520,958	±	6%	0.1747	142,080	185,199	193,678
Shrimps	3,830	±	26%	0.0013	889	2,280	660
Other crustaceans	4,943	±	26%	0.0017	551	4,390	2
Total crustaceans	**529,730**	**±**	**6%**	**0.1776**	**143,520**	**191,869**	**194,341**
Mollusca							
Gastropoda (snails)	142,337	±	9%	0.0477	61,663	57,669	23,005
Pelecypoda (bivalves)	2,599	±	22%	0.0009	427	1,986	187
Squids	0	±	0%	0.0000	0	0	0
Octopuses	188	±	16%	0.0001	14	0	174
Other mollusks	15,464	±	17%	0.0052	8,376	5,730	1,359
Total mollusks	**160,588**	**±**	**9%**	**0.0538**	**70,479**	**65,385**	**24,724**
Echinodermata							
Asteroidea (sea stars)	538,072	±	8%	0.1804	138,984	254,948	13,963
Ophiuroidea (brittle stars)	71,522	±	19%	0.0240	8,724	54,334	8,464
Echinoidea (sea urchin)	51,543	±	41%	0.0173	1,368	50,160	15
Holothuroidea (sea cucumbers)	7,112	±	51%	0.0024	299	6,813	0
Total echinoderms	**668,250**	**±**	**8%**	**0.2241**	**149,375**	**366,255**	**22,442**
Ascidiacea	367,740	±	30%	0.1233	83,958	276,417	7,365
Porifera (sponges)	15,635	±	53%	0.0052	3,358	12,277	0
Coelenterata	37,902	±	12%	0.0127	8,955	20,716	8,231
Other invertebrates	3,003	±	21%	0.0010	914	1,935	154
Total invertebrates	**1,782,849**	**±**	**9%**	**0.5978**	**460,560**	**934,854**	**257,258**

[a]Differences in sums of estimates and totals are due to rounding.

[b]Proportion of total estimated biomass, fish and invertebrates combined, for the total survey area = 2,982,193 t.

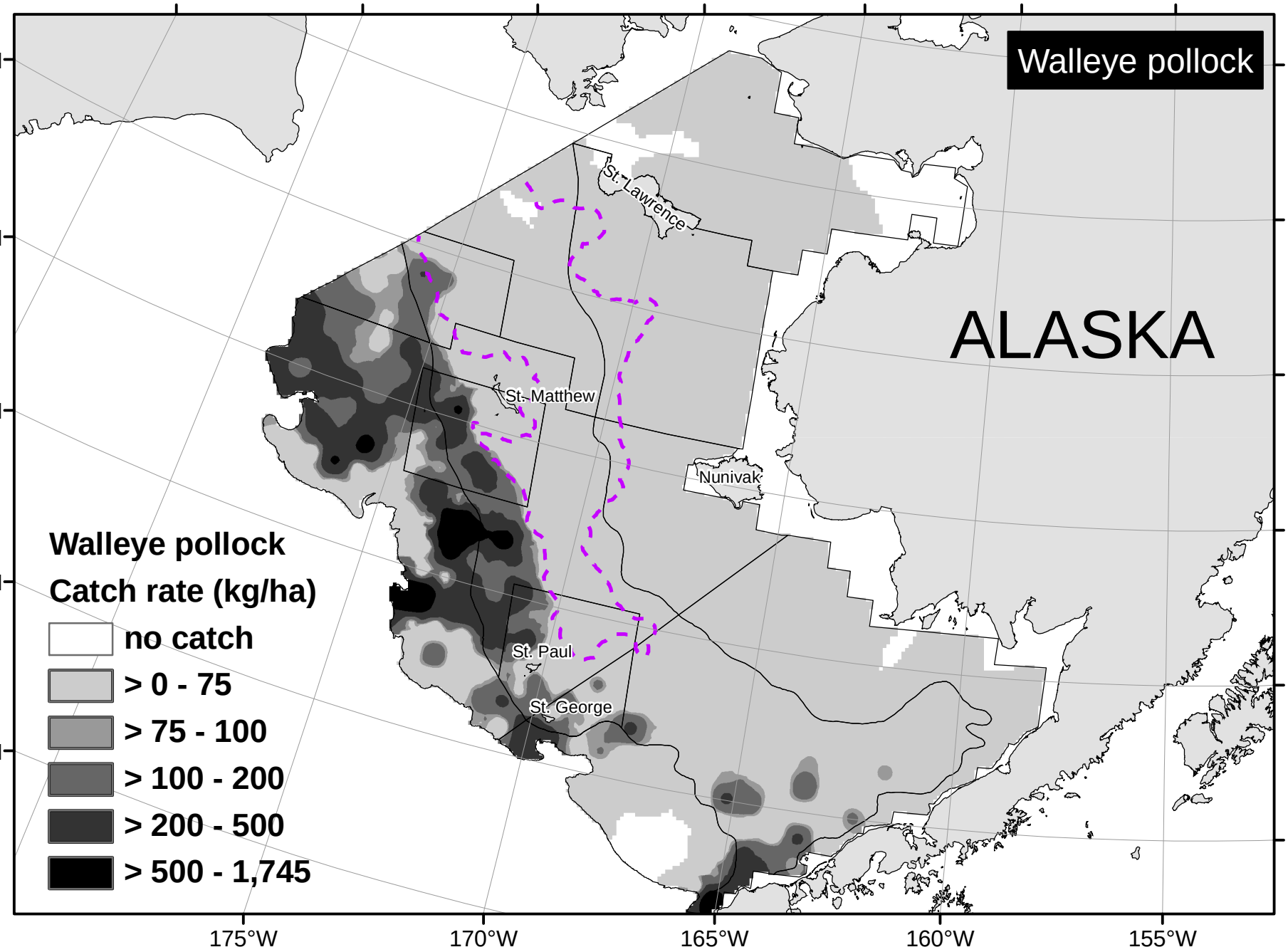

Figure 9. -- Distribution and relative abundance (kg/ha) of **walleye pollock** (*Theragra chalcogramma*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey. The dashed line represents the isotherm for the bottom water temperature -1°C .

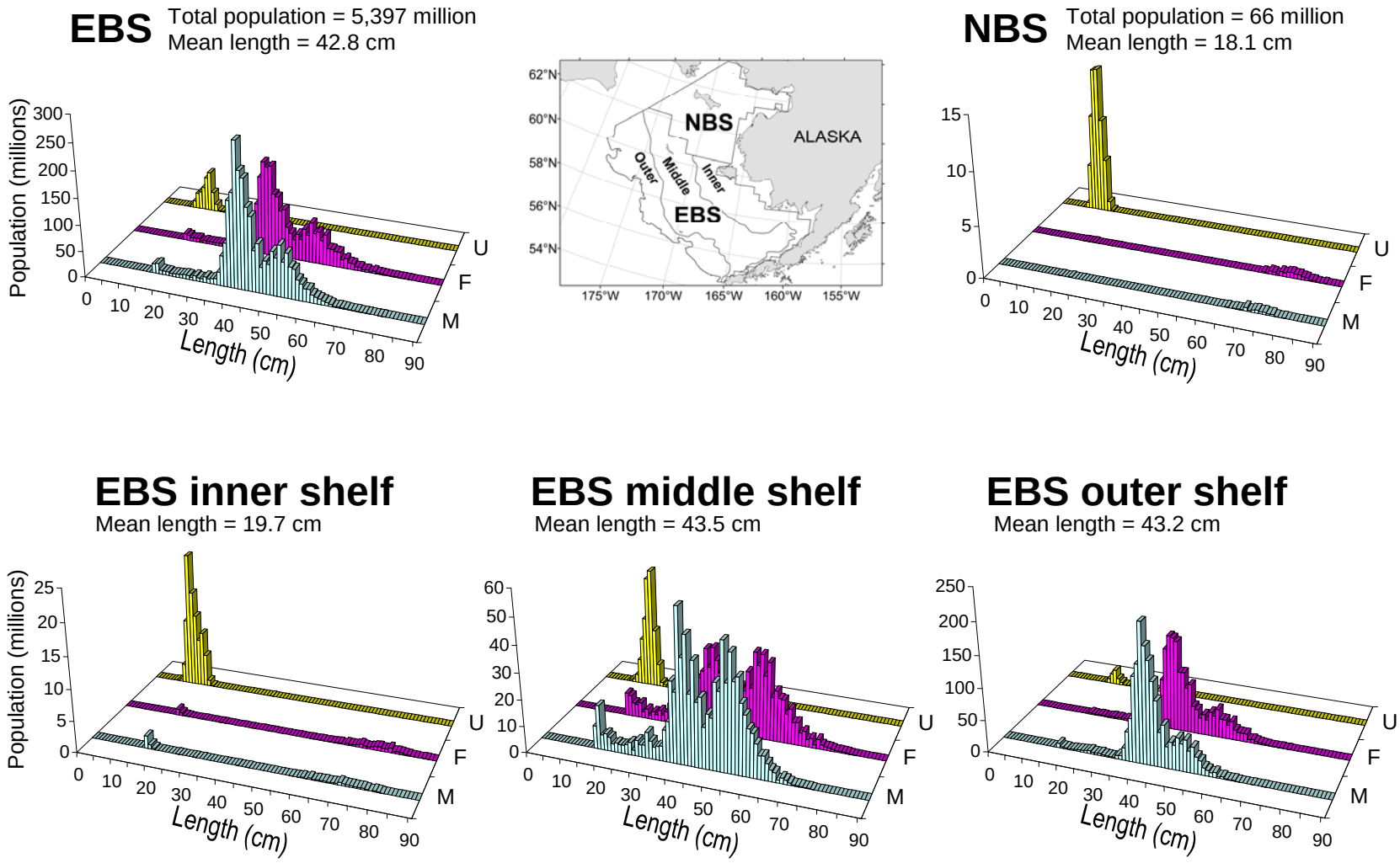

Figure 10. -- Total abundance-at-size and mean length of **walleye pollock** (*Theragra chalcogramma*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 9a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	3.56	7.78E-01	27,735	6.06E+03	15,492	39,979	58	42	42	41
EBS 20	2.18	3.97E-01	8,932	1.63E+03	5,605	12,260	31	27	27	27
Subtotal	3.08	5.28E-01	36,667	6.27E+03	24,120	49,214	89	69	69	68
EBS 31	54.95	1.51E+01	519,397	1.43E+05	233,731	805,064	69	68	68	68
EBS 32	67.64	2.37E+01	59,344	2.08E+04	10,150	108,539	8	8	8	8
EBS 41	55.56	1.91E+01	348,408	1.19E+05	106,905	589,911	44	39	39	37
EBS 42	76.56	1.93E+01	183,824	4.63E+04	89,377	278,272	31	31	31	31
EBS 43	131.72	3.50E+01	278,032	7.38E+04	124,446	431,618	22	22	22	22
EBS 82	37.54	1.87E+01	67,406	3.35E+04	0	141,195	12	12	12	12
Subtotal	63.58	9.14E+00	1,456,412	2.09E+05	1,041,892	1,870,933	186	180	180	178
EBS 50	40.21	1.91E+01	155,991	7.41E+04	3,305	308,678	26	14	14	14
EBS 61	208.33	4.13E+01	1,836,061	3.64E+05	1,100,377	2,571,746	60	57	57	57
EBS 62	207.28	7.06E+01	133,254	4.54E+04	22,273	244,236	7	7	7	7
EBS 90	103.30	1.60E+01	119,491	1.85E+04	75,650	163,332	8	8	8	8
Subtotal	154.90	2.59E+01	2,244,798	3.75E+05	1,495,385	2,994,211	101	86	86	86
Total EBS	75.83	8.71E+00	3,737,878	4.29E+05	2,879,337	4,596,420	376	335	335	332
NBS 70	1.24	2.85E-01	9,798	2.26E+03	5,228	14,368	58	47	47	47
NBS 71	1.30	4.62E-01	10,767	3.82E+03	3,052	18,481	56	26	26	25
NBS 81	0.15	5.75E-02	559	2.20E+02	107	1,012	28	16	16	16
Total NBS	1.06	9.05E-02	21,124	1.81E+03	17,501	24,748	142	89	89	0

*Differences in sums of estimates and totals are due to rounding.

Table 9b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **walleye pollock** (*Theragra chalcogramma*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	6.21	1.45E+00	48,341,852	1.13E+07	25,600,218	71,083,486	58	42	42	41
EBS 20	13.52	6.24E+00	55,486,732	2.56E+07	3,200,319	107,773,144	31	27	27	27
Subtotal	8.73	2.35E+00	103,828,584	2.80E+07	47,890,631	159,766,536	89	69	69	68
EBS 31	56.11	1.45E+01	530,401,014	1.37E+08	255,433,618	805,368,409	69	68	68	68
EBS 32	58.56	2.16E+01	51,378,345	1.89E+07	6,568,742	96,187,947	8	8	8	8
EBS 41	94.06	3.40E+01	589,782,769	2.13E+08	159,537,735	1,020,027,803	44	39	39	37
EBS 42	84.59	2.50E+01	203,115,510	6.00E+07	80,668,806	325,562,214	31	31	31	31
EBS 43	154.73	4.22E+01	326,597,381	8.91E+07	141,325,565	511,869,198	22	22	22	22
EBS 82	81.66	4.64E+01	146,609,816	8.33E+07	0	329,844,367	12	12	12	12
Subtotal	80.67	1.26E+01	1,847,884,835	2.88E+08	1,277,307,826	2,418,461,844	186	180	180	178
EBS 50	35.15	1.66E+01	136,369,762	6.45E+07	3,520,281	269,219,244	26	14	14	14
EBS 61	325.94	7.20E+01	2,872,610,046	6.35E+08	1,590,135,935	4,155,084,156	60	57	57	57
EBS 62	336.61	1.26E+02	216,392,033	8.09E+07	18,506,238	414,277,828	7	7	7	7
EBS 90	190.11	4.48E+01	219,923,933	5.18E+07	97,468,308	342,379,557	8	8	8	8
Subtotal	237.73	4.45E+01	3,445,295,774	6.45E+08	2,155,235,458	4,735,356,089	101	86	86	86
Total EBS	109.50	1.43E+01	5,397,009,193	7.07E+08	3,982,953,697	6,811,064,687	376	335	335	332
NBS 70	5.92	2.07E+00	46,888,509	1.64E+07	13,695,508	80,081,511	58	47	47	47
NBS 71	0.52	1.53E-01	4,306,238	1.26E+06	1,751,416	6,861,059	56	26	26	25
NBS 81	3.78	1.93E+00	14,512,083	7.39E+06	0	29,673,048	28	16	16	16
Total NBS	3.28	9.02E-01	65,706,830	1.81E+07	29,599,455	101,814,204	142	89	89	0

*Differences in sums of estimates and totals are due to rounding.

Pacific Cod (*Gadus macrocephalus*)

Pacific cod were broadly distributed across the EBS shelf and were present at 91% of the sampled stations compared to a patchy distribution in the NBS, where they were present at only 41% of the stations (Fig. 11). The biomass of Pacific cod in the EBS was 0.87 million t (Table 10a), which was more than double the 2009 estimate, and population numbers increased 24% to 892 million, which was the highest since 2001 (Table 10b; Thompson et al. 2010). The biomass and population size in the NBS were comparatively small with 29,000 t and 8.9 million fish (Table 10a, b), although more than 50% of the Pacific cod in the NBS were very large (over 60 cm; Fig. 12). The large increase in biomass and the presence of high abundance at several modal lengths above 30 cm suggest strong recruitment from the 2006 to 2008 year classes (Fig. 12).

Yellowfin Sole (*Limanda aspera*)

Yellowfin sole were distributed across the shelf to a bottom depth of 100 m with highest catch rates occurring in Bristol Bay and along the inner shelf from the Alaska Peninsula north to St. Lawrence Island (Table 11a, b; Fig. 13). The biomass on the EBS shelf, where the world's largest flatfish commercial fishery operates (Wilderbeur et al. 2010), increased from 1.7 to about 2.4 million t (Table 11a) and the population number decreased slightly from 8.4 billion to 10.1 billion (Table 11b). In the NBS, there was an additional 0.43 million t of yellowfin sole (Table 11a), but this area is not opened to large-scale commercial fishing.

Yellowfin sole are segregated by depth based on size and sexual maturity (Nichol 1997, 1998). The size composition of yellowfin sole during the 2010 survey differed between the EBS and NBS, between the EBS middle and inner shelf, and between males and females on the EBS

middle shelf (Fig. 14). Sexually mature yellowfin sole undergo an annual spring-summer spawning migration across the shelf into the shallow waters of Bristol Bay and off Nunivak Island (Bakkala 1981) with most spawning activity occurring at bottom depths < 30 m (Nichol 1995). Sexually immature individuals, which can be up to 6-8 years old, undergo an ontogenetic migration rather than a spawning migration by moving deeper as they get older (Nichol 1997). Length or age at sexual maturity differs for males and females causing further size segregation among spawning and non-spawning portions of the population (Nichol 1998).

Northern and Southern Rock Sole (*Lepidopsetta* spp.)

Rock sole were broadly distributed across the shelf with highest concentrations in Bristol Bay and around the Pribilof Islands (Table 12a, b; Fig. 15). From 2009, estimated biomass in the EBS increased 33% to 2.06 million t (Table 12a) and the estimated population number increased by 13% to 9.3 billion (Table 12b). Less than 1% of the total shelf-wide biomass was in the NBS. Mean length of rock sole increased moving deeper across the EBS shelf in contrast to the NBS where the mean size was very similar to EBS outer shelf (Fig. 16). Spawning and feeding migrations for rock soles are poorly understood, but in general it is believed that rock sole use active tidal stream transport during nighttime hours (Nichol and Somerton 2009) to migrate from shallow summer feeding grounds to deep winter and spring spawning grounds (Fadeev 1965, Shubnikov and Lisovenko 1964).

Flathead Sole (*Hippoglossoides elassodon*)

Flathead sole and Bering flounder are members of the same genus, and they are difficult to distinguish based on appearance. Consequently, the accuracy of identifications in the

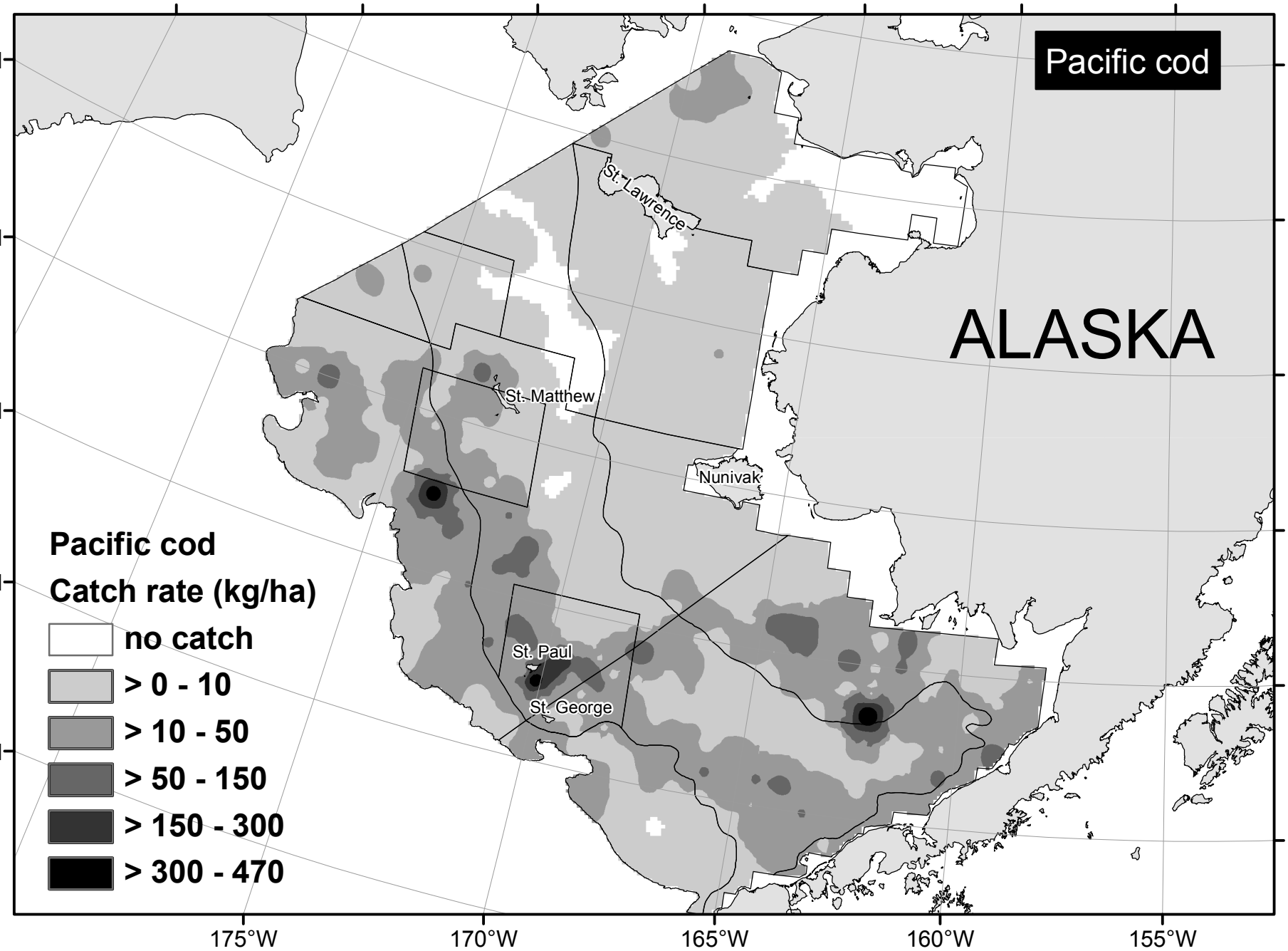

Figure 11. -- Distribution and relative abundance (kg/ha) of **Pacific cod** (*Gadus macrocephalus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

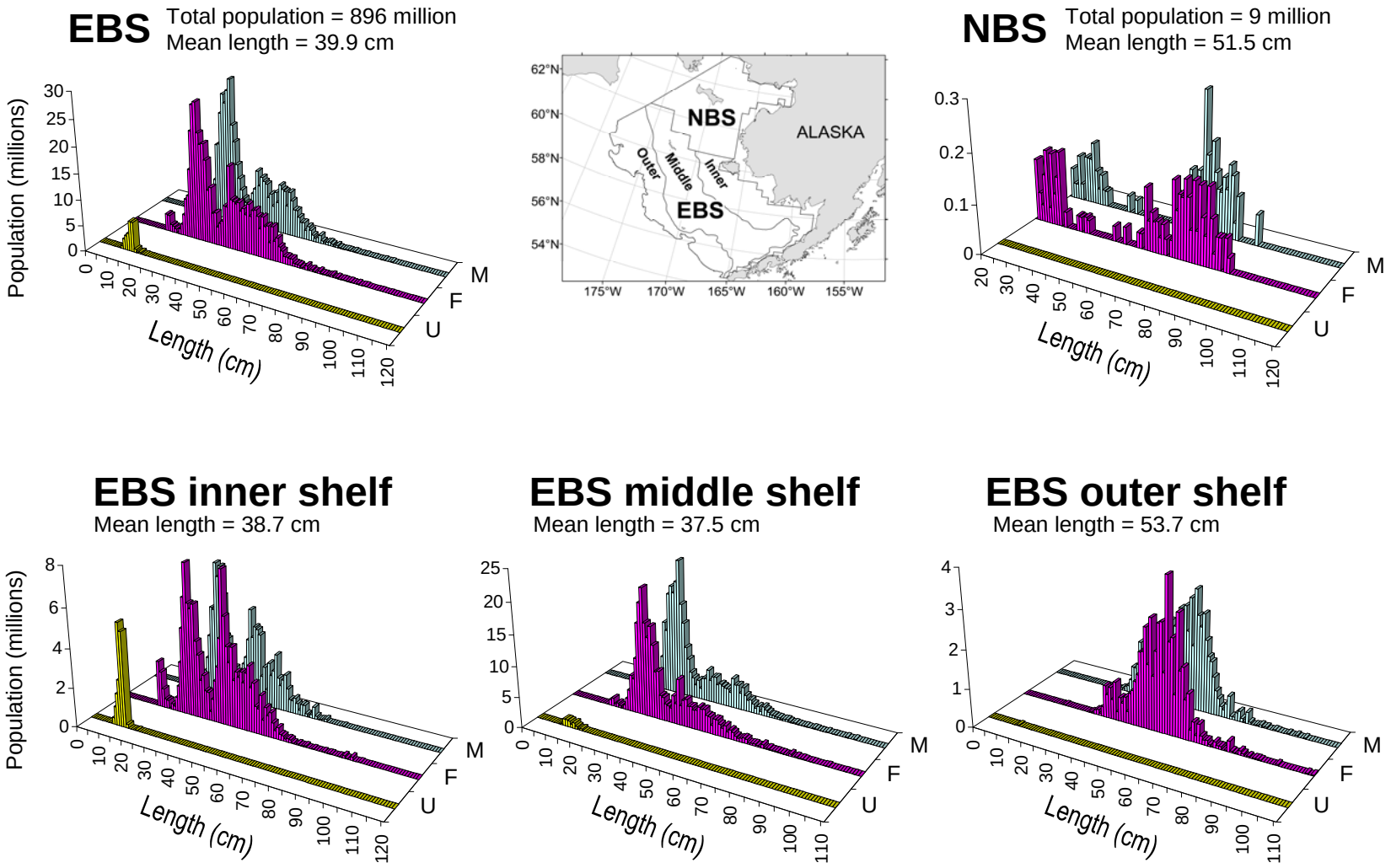

Figure 12. -- Total abundance-at-size and mean length of **Pacific cod** (*Gadus macrocephalus*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 10a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	28.24	8.51E+00	219,876	6.63E+04	85,967	353,786	58	53	53	53
EBS 20	2.67	6.88E-01	10,949	2.82E+03	5,183	16,714	31	27	27	27
Subtotal	19.41	5.58E+00	230,825	6.63E+04	96,794	364,857	89	80	80	80
EBS 31	16.17	2.26E+00	152,860	2.13E+04	110,163	195,556	69	69	69	69
EBS 32	22.57	8.45E+00	19,800	7.41E+03	1,657	37,942	8	8	8	8
EBS 41	12.37	3.22E+00	77,583	2.02E+04	36,737	118,429	44	29	29	29
EBS 42	55.40	1.72E+01	133,033	4.14E+04	48,356	217,710	31	31	31	31
EBS 43	10.93	2.01E+00	23,073	4.25E+03	14,205	31,941	22	22	22	22
EBS 82	1.89	1.22E+00	3,396	2.18E+03	0	8,201	12	7	7	7
Subtotal	17.89	2.25E+00	409,744	5.15E+04	306,660	512,827	186	166	166	166
EBS 50	6.66	1.60E+00	25,818	6.21E+03	13,016	38,620	26	22	22	22
EBS 61	21.43	6.58E+00	188,838	5.80E+04	71,549	306,127	60	60	60	60
EBS 62	12.15	1.82E+00	7,813	1.17E+03	4,947	10,679	7	7	7	7
EBS 90	6.08	1.73E+00	7,033	2.01E+03	2,287	11,779	8	8	8	8
Subtotal	15.84	4.03E+00	229,502	5.84E+04	112,675	346,328	101	97	97	97
Total EBS	75.83	8.71E+00	870,070	4.29E+05	2,879,337	4,596,420	376	335	335	332
NBS 70	0.94	2.71E-01	7,463	2.15E+03	3,126	11,800	58	33	33	33
NBS 71	2.54	7.53E-01	20,948	6.22E+03	8,387	33,510	56	24	24	24
NBS 81	0.18	1.09E-01	680	4.17E+02	0	1,538	28	6	6	6
Total NBS	1.45	1.35E-01	29,091	2.70E+03	23,687	34,496	142	63	63	0

*Differences in sums of estimates and totals are due to rounding.

Table 10b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Pacific cod** (*Gadus macrocephalus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers[a]	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	31.35	8.51E+00	244,094,679	6.63E+07	110,152,574	378,036,785	58	53	53	53
EBS 20	4.76	1.57E+00	19,536,367	6.42E+06	6,417,147	32,655,587	31	27	27	27
Subtotal	22.17	5.60E+00	263,631,046	6.66E+07	129,061,065	398,201,027	89	80	80	80
EBS 31	23.05	5.65E+00	217,892,116	5.34E+07	111,001,311	324,782,922	69	69	69	69
EBS 32	20.25	1.02E+01	17,766,220	8.95E+06	0	39,675,519	8	8	8	8
EBS 41	9.79	3.37E+00	61,407,014	2.12E+07	18,644,908	104,169,120	44	29	29	29
EBS 42	82.55	2.95E+01	198,216,083	7.08E+07	53,406,829	343,025,337	31	31	31	31
EBS 43	10.17	2.05E+00	21,466,174	4.32E+06	12,460,237	30,472,111	22	22	22	22
EBS 82	2.68	1.72E+00	4,808,422	3.09E+06	0	11,606,999	12	7	7	7
Subtotal	22.77	4.01E+00	521,556,029	9.18E+07	337,961,848	705,150,211	186	166	166	166
EBS 50	4.35	1.31E+00	16,857,856	5.08E+06	6,388,654	27,327,058	26	22	22	22
EBS 61	9.83	3.24E+00	86,637,160	2.85E+07	28,971,767	144,302,553	60	60	60	60
EBS 62	5.57	8.50E-01	3,582,995	5.47E+05	2,245,204	4,920,785	7	7	7	7
EBS 90	3.16	9.46E-01	3,656,136	1.09E+06	1,068,071	6,244,201	8	8	8	8
Subtotal	7.64	2.00E+00	110,734,147	2.90E+07	52,718,209	168,750,085	101	97	97	97
Total EBS	109.50	1.43E+01	895,921,222	7.07E+08	3,982,953,697	6,811,064,687	376	335	335	332
NBS 70	0.60	1.71E-01	4,724,220	1.36E+06	1,979,809	7,468,630	58	33	33	33
NBS 71	0.47	1.29E-01	3,922,029	1.06E+06	1,773,529	6,070,529	56	24	24	24
NBS 81	0.07	3.17E-02	250,837	1.22E+05	871	500,804	28	6	6	6
Total NBS	0.44	8.64E-02	8,897,086	1.73E+06	5,439,366	12,354,805	142	63	63	0

[*]Differences in sums of estimates and totals are due to rounding.

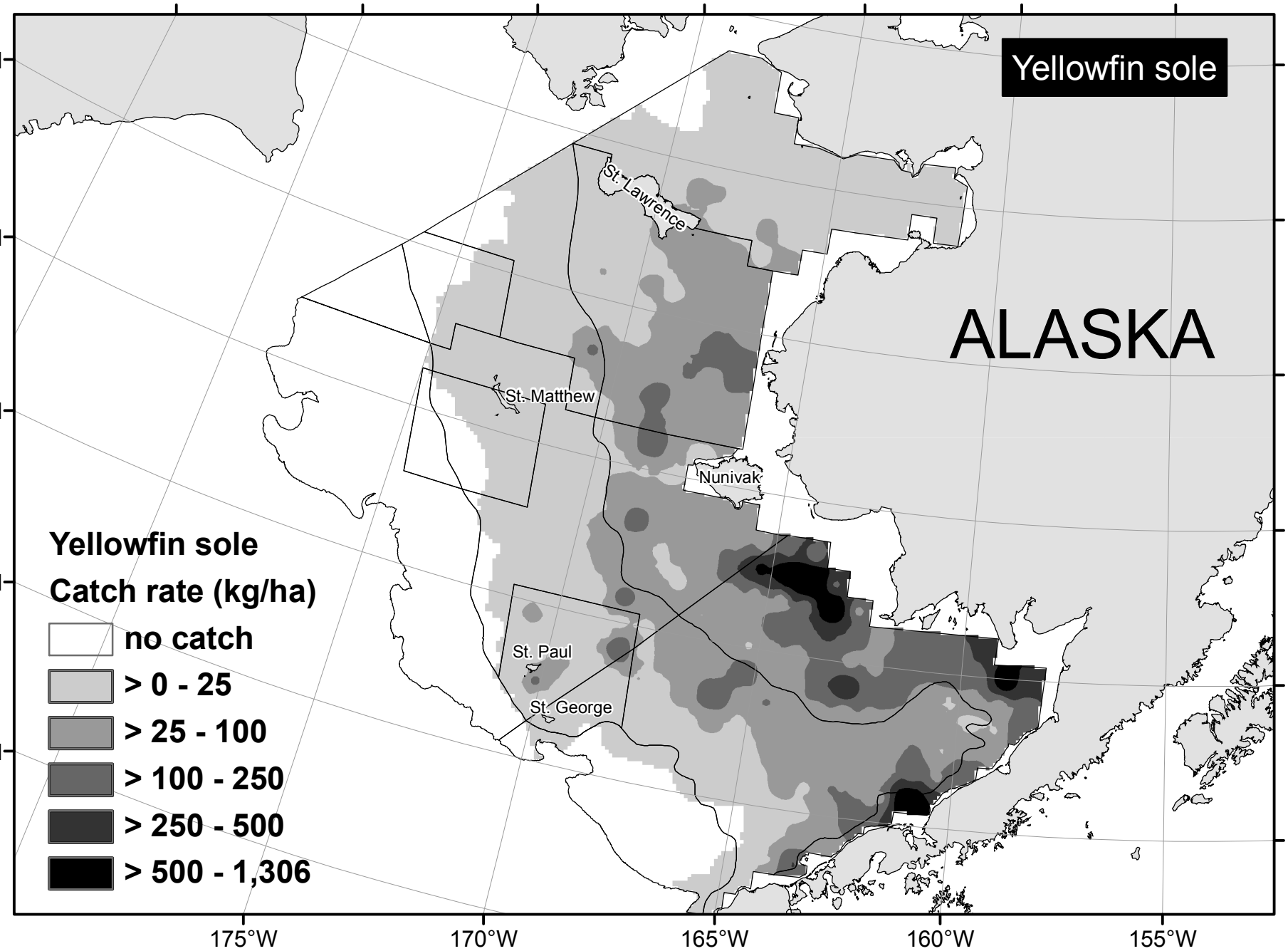

Figure 13. -- Distribution and relative abundance (kg/ha) of **yellowfin sole** (*Limand aspera*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

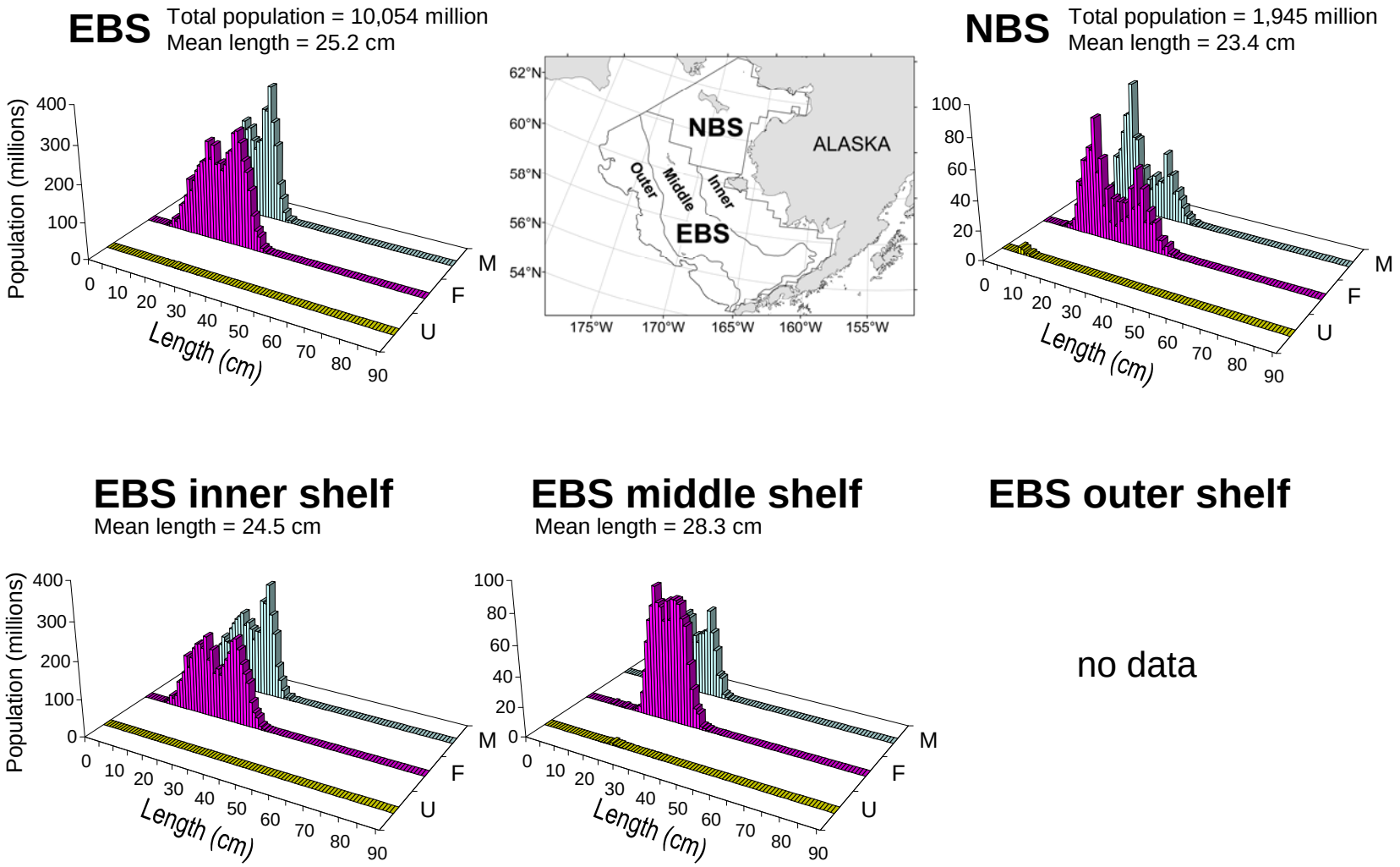

Figure 14. -- Total abundance-at-size and mean length of **yellowfin sole** (*Limanda aspera*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 11a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **yellowfin sole** (*Limanda aspera*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	204.43	3.44E+01	1,591,892	2.68E+05	1,050,475	2,133,310	58	58	58	58
EBS 20	55.69	1.04E+01	228,469	4.28E+04	141,120	315,818	31	31	31	31
Subtotal	153.10	2.28E+01	1,820,361	2.71E+05	1,272,085	2,368,637	89	89	89	89
EBS 31	45.91	6.52E+00	433,999	6.16E+04	310,700	557,299	69	62	62	61
EBS 32	0.70	2.27E-01	613	1.99E+02	141	1,084	8	6	6	6
EBS 41	10.06	4.07E+00	63,106	2.55E+04	11,579	114,633	44	35	35	34
EBS 42	20.27	8.96E+00	48,669	2.15E+04	4,667	92,670	31	26	26	26
EBS 43	0.51	2.75E-01	1,082	5.81E+02	0	2,295	22	9	9	9
EBS 82	0.01	4.22E-03	13	7.58E+00	0	30	12	3	3	3
Subtotal	23.90	3.06E+00	547,482	7.01E+04	407,282	687,683	186	141	141	139
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
EBS 62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total EBS	48.04	5.77E+00	2,367,843	2.84E+05	1,799,272	2,936,414	376	230	230	228
NBS 70	46.33	5.60E+00	367,190	4.44E+04	277,442	456,938	58	57	57	57
NBS 71	4.06	1.13E+00	33,514	9.30E+03	14,716	52,311	56	45	45	45
NBS 81	7.01	4.10E+00	26,887	1.57E+04	0	59,252	28	20	20	20
Total NBS	21.36	2.40E+00	427,591	4.80E+04	331,541	523,640	142	122	122	122

*Differences in sums of estimates and totals are due to rounding.

Table 11b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **yellowfin sole** (*Limanda aspera*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	879.31	1.35E+02	6,847,300,450	1.05E+09	4,721,262,078	8,973,338,822	58	58	58	58
EBS 20	347.00	5.89E+01	1,423,643,177	2.41E+08	930,519,103	1,916,767,252	31	31	31	31
Subtotal	695.63	9.08E+01	8,270,943,627	1.08E+09	6,089,605,812	10,452,000,000	89	89	89	89
EBS 31	145.94	2.08E+01	1,379,517,901	1.97E+08	986,232,834	1,772,802,967	69	62	62	61
EBS 32	1.53	4.97E-01	1,338,649	4.36E+05	307,941	2,369,356	8	6	6	6
EBS 41	33.11	1.34E+01	207,610,722	8.37E+07	38,388,062	376,833,381	44	35	35	34
EBS 42	78.83	3.45E+01	189,270,887	8.28E+07	19,850,855	358,690,919	31	26	26	26
EBS 43	2.59	1.64E+00	5,470,797	3.46E+06	0	12,683,622	22	9	9	9
EBS 82	0.05	2.65E-02	90,930	4.76E+04	0	197,036	12	3	3	3
Subtotal	77.85	1.00E+01	1,783,299,885	2.29E+08	1,324,802,504	2,241,797,267	186	141	141	139
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.00	0.00E+00	0	0.00E+00	0	0	60	0	0	0
EBS 62	0.00	0.00E+00	0	0.00E+00	0	0	7	0	0	0
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	101	0	0	0
Total EBS	203.98	2.24E+01	10,054,243,512	1.10E+09	7,847,416,917	12,261,000,000	376	230	230	228
NBS 70	211.24	3.40E+01	1,674,308,920	2.70E+08	1,128,914,016	2,219,703,825	58	57	57	57
NBS 71	24.87	7.42E+00	205,399,382	6.13E+07	81,588,011	329,210,753	56	45	45	45
NBS 81	16.99	9.34E+00	65,158,560	3.58E+07	0	138,787,932	28	20	20	20
Total NBS	97.14	1.39E+01	1,944,866,862	2.79E+08	1,386,791,255	2,502,942,469	142	122	122	122

*Differences in sums of estimates and totals are due to rounding.

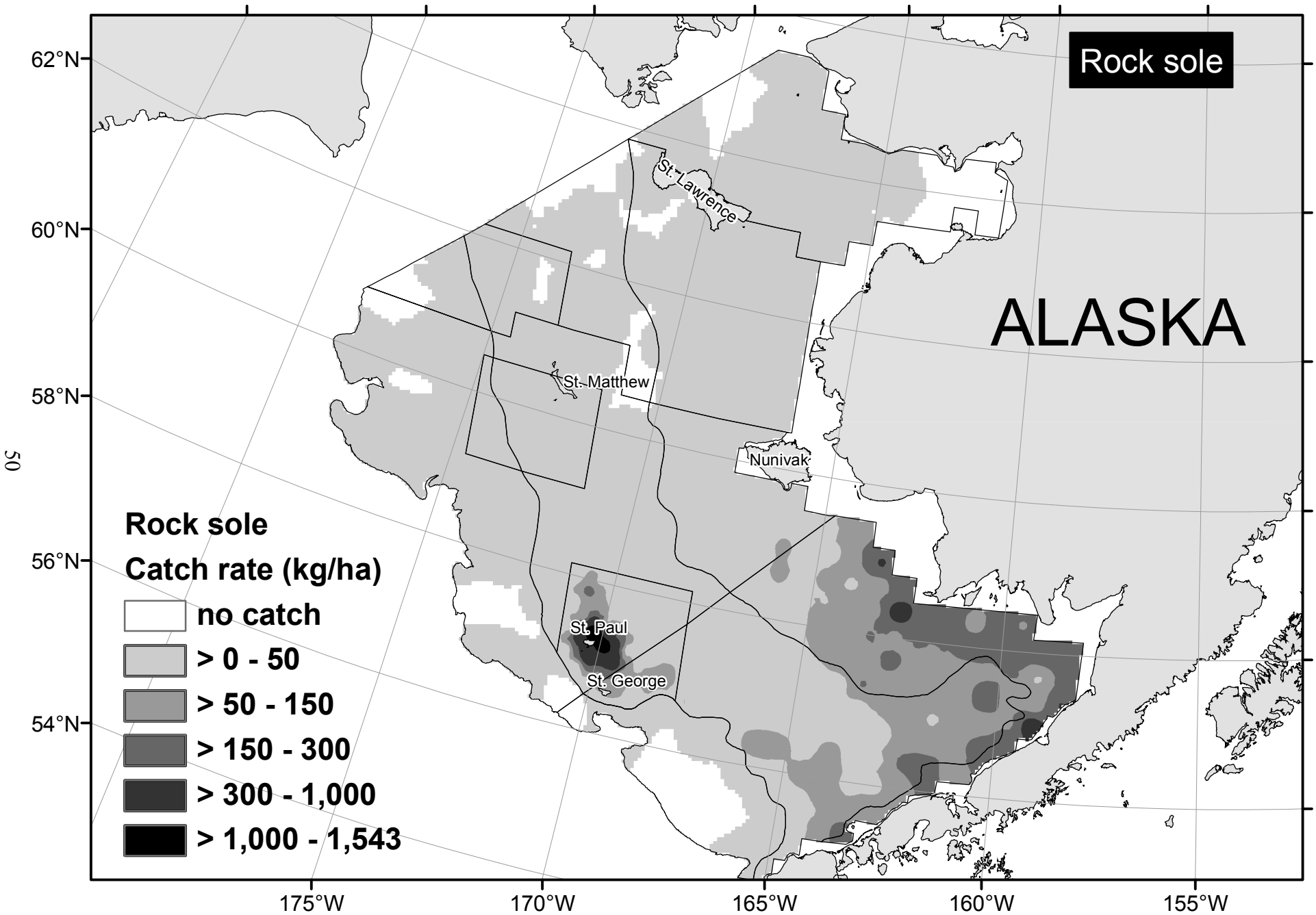

Figure 15. -- Distribution and relative abundance (kg/ha) of **northern** and **southern rock sole** (*Lepidopsetta* spp.) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

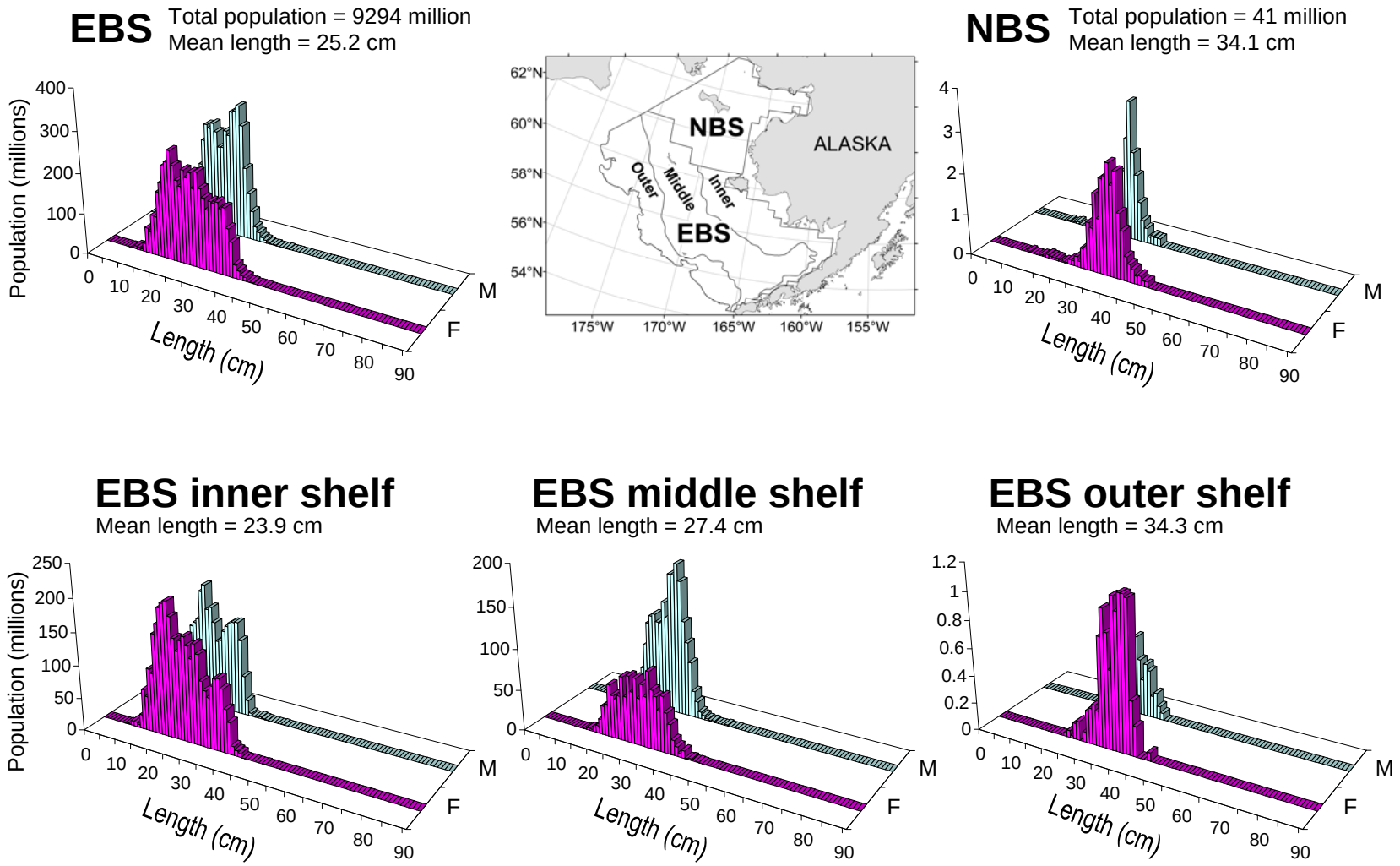

Figure 16. -- Total abundance-at-size and mean length of **northern** and **southern rock sole** (*Lepidopsetta* spp.) by sex (M = male, F = female) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 12a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 11	137.37	1.25E+01	1,069,753	9.77E+04	872,262	1,267,244	58	58	58	57
EBS 20	13.75	2.93E+00	56,414	1.20E+04	31,805	81,023	31	29	29	28
Subtotal	94.72	8.28E+00	1,126,167	9.85E+04	927,184	1,325,150	89	87	87	85
EBS 31	46.23	6.95E+00	436,986	6.57E+04	305,565	568,408	69	69	69	69
EBS 32	59.34	1.76E+01	52,062	1.54E+04	15,621	88,503	8	8	8	8
EBS 41	1.93	9.94E-01	12,110	6.23E+03	0	24,711	44	33	33	33
EBS 42	176.00	6.85E+01	422,585	1.65E+05	86,661	758,509	31	29	29	29
EBS 43	3.23	9.06E-01	6,809	1.91E+03	2,831	10,786	22	21	21	21
EBS 82	0.06	2.37E-02	102	4.25E+01	8	197	12	5	5	5
Subtotal	40.63	7.77E+00	930,655	1.78E+05	567,313	1,293,996	186	165	165	165
EBS 50	0.17	1.08E-01	675	4.20E+02	0	1,541	26	5	5	5
EBS 61	0.69	2.09E-01	6,102	1.84E+03	2,376	9,827	60	28	28	28
EBS 62	2.19	1.17E+00	1,409	7.53E+02	0	3,251	7	6	6	6
EBS 90	0.05	2.42E-02	54	2.80E+01	0	120	8	3	3	3
Subtotal	0.57	1.40E-01	8,240	2.04E+03	4,170	12,311	101	42	42	42
Total EBS	41.90	4.13E+00	2,065,062	2.03E+05	1,658,326	2,471,798	376	294	294	292
NBS 70	1.76	3.88E-01	13,979	3.08E+03	7,764	20,195	58	37	37	37
NBS 71	0.86	2.37E-01	7,112	1.95E+03	3,161	11,063	56	26	26	26
NBS 81	0.04	1.43E-02	153	5.47E+01	41	265	28	7	7	7
Total NBS	1.06	1.82E-01	21,245	3.64E+03	13,955	28,534	142	70	70	70

*Differences in sums of estimates and totals are due to rounding.

Table 12b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **northern** and **southern rock sole** (*Lepidopsetta* spp.) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	734.40	7.75E+01	5,718,855,479	6.03E+08	4,499,477,783	6,938,233,175	58	58	58	57
EBS 20	38.07	9.13E+00	156,169,922	3.75E+07	79,530,111	232,809,733	31	29	29	28
Subtotal	1.24	3.36E-01	5,875,025,401	2.77E+06	4,634,248	15,846,826	56	26	26	26
EBS 31	38.07	9.13E+00	156,169,922	3.75E+07	79,530,111	232,809,733	31	29	29	28
EBS 32	226.39	3.63E+01	2,139,937,651	3.43E+08	1,453,686,546	2,826,188,755	69	69	69	69
EBS 41	216.17	6.37E+01	189,670,199	5.59E+07	57,421,096	321,919,302	8	8	8	8
EBS 42	4.27	1.95E+00	26,777,449	1.22E+07	2,051,955	51,502,943	44	33	33	33
EBS 43	430.00	1.73E+02	1,032,466,082	4.15E+08	185,603,339	1,879,328,826	31	29	29	29
EBS 82	3.40	1.73E+00	2,184,469	1.11E+06	0	4,912,104	7	6	6	6
Subtotal	0.07	2.47E-02	3,404,369,649	9.45E+04	67,641	455,644	28	7	7	7
EBS 50	7.24	1.97E+00	15,276,575	4.16E+06	6,621,878	23,931,272	22	21	21	21
EBS 61	0.44	2.88E-01	1,709,483	1.12E+06	0	4,014,491	26	5	5	5
EBS 62	1.20	3.59E-01	10,554,732	3.16E+06	4,166,626	16,942,839	60	28	28	28
EBS 90	3.87	8.62E-01	30,672,182	6.83E+06	16,870,187	44,474,178	58	37	37	37
Subtotal	0.13	5.76E-02	14,596,962	1.03E+05	11,366	472,021	12	5	5	5
Total EBS	188.56	1.65E+01	9,293,992,012	8.11E+08	7,671,061,055	10,917,000,000	376	294	294	292
NBS 70	3.87	8.62E-01	30,672,182	6.83E+06	16,870,187	44,474,178	58	37	37	37
NBS 71	1.24	3.36E-01	10,240,537	2.77E+06	4,634,248	15,846,826	56	26	26	26
NBS 81	0.07	2.47E-02	261,642	9.45E+04	67,641	455,644	28	7	7	7
Total NBS	2.06	3.68E-01	41,174,361	7.37E+06	26,430,778	55,917,945	142	70	70	70

*Differences in sums of estimates and totals are due to rounding.

commercial fishery data is unknown and the two species are combined into a single stock assessment by the NPFMC (Stockhausen et al. 2010). In contrast, BT survey scientists are trained to make reliable field identifications for flathead sole and Bering flounder; hence, results here are presented by species. Despite belonging to the same genus and having a similar appearance, the two species have entirely different geographic distributions (Fig. 17; compare with Bering flounder below). Flathead sole were present at 68% of the EBS stations and completely absent in the NBS (Fig. 17). The highest catch rates of flathead sole were at depths below 70 m and the estimated biomass of 0.49 million t (Table 13a) and population number of 1.6 billion (Table 13b) were both increases from 2009 levels. A similar size range of flathead sole (10-50 cm) was observed at all depths and the mean length for the entire EBS shelf was 29.7 cm (Fig. 19).

Bering Flounder (*Hippoglossoides robustus*)

Bering flounder is an arctic species with a distribution extending north into the Chukchi Sea (Mecklenburg et al. 2007). The spatial distribution of Bering flounder in the EBS and NBS BT survey was mostly contained within an area where bottom water temperatures were ≤ 2°C (Fig. 19). The highest catch rates were in the middle shelf close to the U.S.-Russian Convention Line where bottom water temperatures were below 0°C (Fig. 19). The total estimated biomass for the EBS and NBS was 24,000 t (Table 14a) and the total population number was 364 million fish (Table 14b). Seventy-nine percent of the total population consisted of juveniles measuring ≤ 20 cm (Fig. 20). Discounting the NBS portion, the 2010 abundance of juvenile Bering flounder in the EBS was 4 to 13 times greater than any survey year going back to 1999. The

relatively high abundance of juvenile Bering flounder in 2010 suggests that environmental conditions during the recent cold period may have been favorable for recruitment of that species.

Alaska Plaice (*Pleuronectes quadrituberculatus*)

Alaska plaice were distributed throughout the inner and middle shelf from Bristol Bay to the Bering Strait with the highest densities found along the 50 m contour and south of St. Lawrence Island (Fig. 21). The summer distribution of Alaska plaice appeared to be unaffected by cold bottom tempertures because catch rates were highest inside the cold pool even where bottom water temperatures were below -1°C (Fig. 21). Alaska plaice are well-adapted to sea water temperatures near the freezing point (-1.9°C) because they are capable of synthesizing an antifreeze glycoprotein to prevent ice crystal formation in their blood (Knight et al. 1991).

Results from this year and previous AFSC trawl surveys show that females attain a maximum length about 10 cm greater than males, and that the proportion of males in the population increases with decreasing bottom depth (Fig. 22, Zhang et al. 1998). Males were totally absent on the EBS outer shelf but increased to 36% of the population on the middle shelf and 69% of the population on the inner shelf (Fig. 22).

In 2010, the estimated biomass of Alaska plaice in the EBS was 498,000 t (948 million fish) with an additional 303,000 t (592 million fish) in the NBS (Table 15a, b). Biomass estimates on the EBS shelf alone have fluctuated between 423,000 t and 645,000 t over the past 20 years. It was evident from the expanded coverage of the 2010 survey that a large proportion of Alaska plaice can occupy the area north of the standard annual EBS survey. Interpreting a meaningful relative trend in Alaska plaice abundance in the EBS time series is difficult without

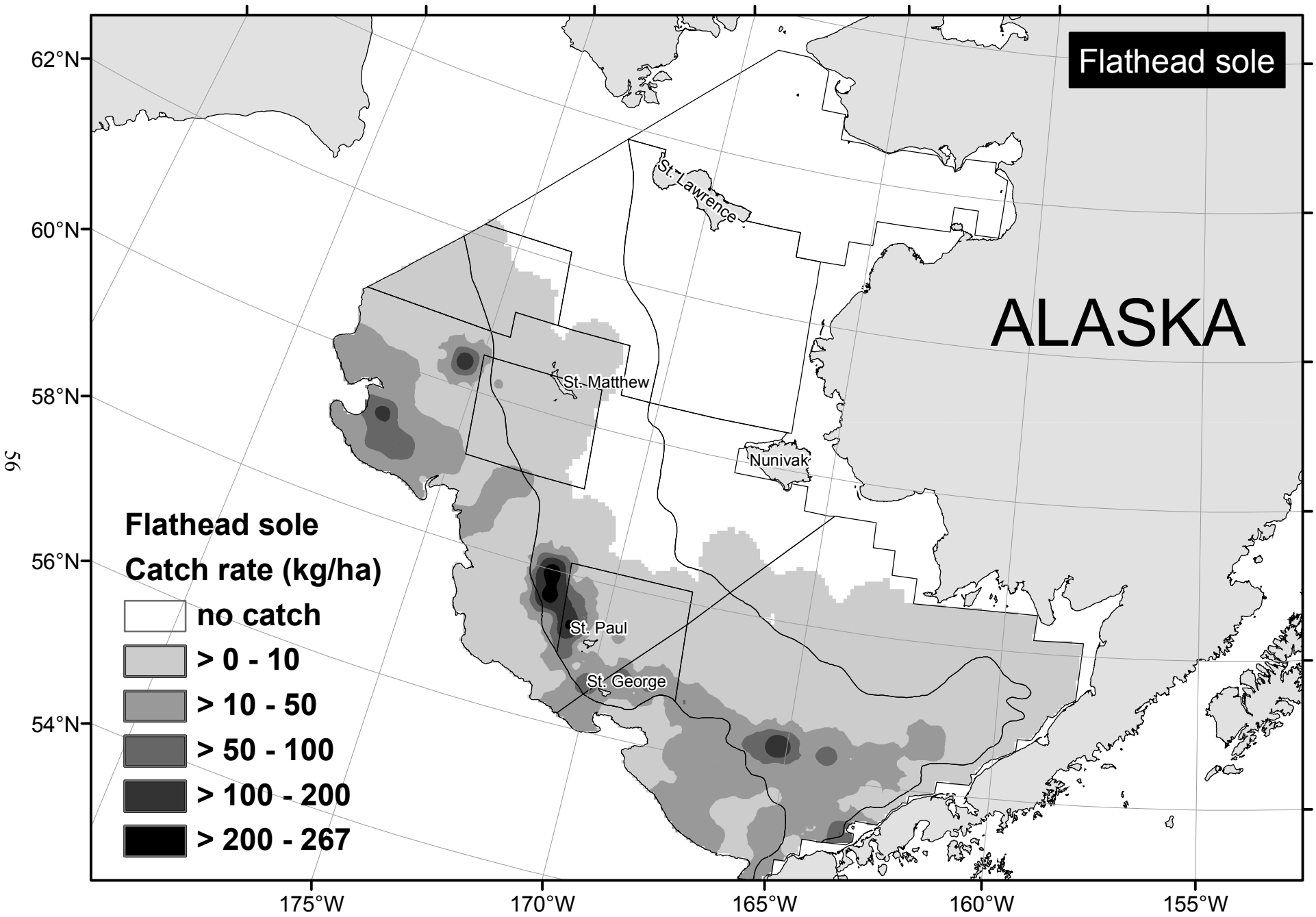

Figure 17. -- Distribution and relative abundance (kg/ha) of **flathead sole** (*Hippoglossoides elassodon*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

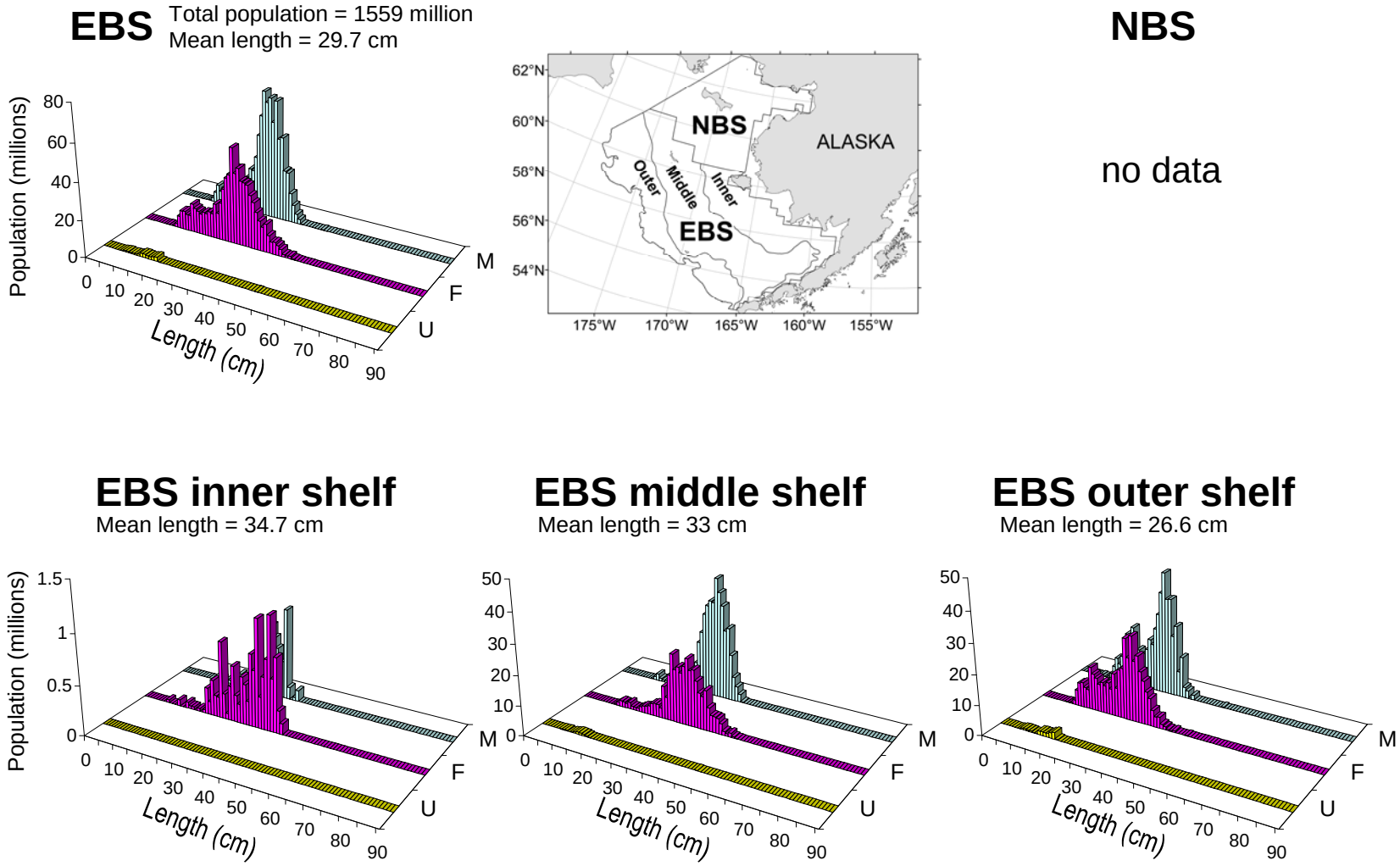

Figure 18. -- Total abundance-at-size and mean length of **flathead sole** (*Hippoglossoides elassodon*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 13a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **flathead sole** (*Hippoglossoides elassodon*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	1.03	2.04E-01	8,035	1.59E+03	4,822	11,247	58	33	33	33
EBS 20	0.03	2.88E-02	138	1.18E+02	0	380	31	2	2	2
Subtotal	0.69	1.34E-01	8,173	1.59E+03	4,951	11,394	89	35	35	35
EBS 31	14.67	3.38E+00	138,691	3.19E+04	74,863	202,519	69	65	65	65
EBS 32	28.17	1.46E+01	24,716	1.28E+04	0	55,081	8	7	7	7
EBS 41	12.40	8.21E+00	77,743	5.15E+04	0	181,826	44	12	12	12
EBS 42	21.57	8.85E+00	51,780	2.12E+04	8,346	95,214	31	25	25	25
EBS 43	0.87	5.81E-01	1,841	1.23E+03	0	4,402	22	12	12	12
EBS 82	0.03	1.48E-02	53	2.66E+01	0	111	12	4	4	4
Subtotal	12.87	2.86E+00	294,823	6.55E+04	163,853	425,794	186	125	125	125
EBS 50	13.17	2.20E+00	51,108	8.55E+03	33,504	68,711	26	25	25	24
EBS 61	15.18	3.73E+00	133,816	3.29E+04	67,395	200,237	60	58	58	58
EBS 62	1.15	2.74E-01	738	1.76E+02	307	1,169	7	6	6	6
EBS 90	0.09	2.03E-02	104	2.35E+01	49	160	8	7	7	7
Subtotal	12.82	2.34E+00	185,766	3.40E+04	117,849	253,683	101	96	96	95
Total EBS	9.92	1.50E+00	488,762	7.38E+04	342,671	634,854	376	256	256	255
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0

*Differences in sums of estimates and totals are due to rounding.

Table 13b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **flathead sole** (*Hippoglossoides elassodon*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	2.14	5.21E-01	16,638,909	4.06E+06	8,431,835	24,845,982	58	33	33	33
EBS 20	0.05	3.51E-02	188,451	1.44E+05	0	482,187	31	2	2	2
Subtotal	1.42	3.42E-01	16,827,360	4.06E+06	8,615,139	25,039,581	89	35	35	35
EBS 31	43.21	8.65E+00	408,453,442	8.18E+07	244,887,796	572,019,088	69	65	65	65
EBS 32	55.31	2.93E+01	48,530,126	2.57E+07	0	109,361,682	8	7	7	7
EBS 41	25.94	1.70E+01	162,645,920	1.07E+08	0	378,088,593	44	12	12	12
EBS 42	39.91	1.59E+01	95,824,928	3.81E+07	17,890,630	173,759,227	31	25	25	25
EBS 43	3.04	2.17E+00	6,422,147	4.58E+06	0	15,980,791	22	12	12	12
EBS 82	0.72	6.33E-01	1,298,805	1.14E+06	0	3,801,685	12	4	4	4
Subtotal	31.57	6.20E+00	723,175,368	1.42E+08	439,001,773	1,007,348,964	186	125	125	125
EBS 50	74.39	1.11E+01	288,591,603	4.30E+07	199,989,002	377,194,204	26	25	25	24
EBS 61	59.68	1.42E+01	525,981,812	1.25E+08	273,376,806	778,586,819	60	58	58	58
EBS 62	4.89	1.09E+00	3,143,299	6.98E+05	1,434,996	4,851,603	7	6	6	6
EBS 90	0.89	2.69E-01	1,030,307	3.11E+05	293,683	1,766,930	8	7	7	7
Subtotal	56.50	9.12E+00	818,747,022	1.32E+08	554,375,655	1,083,118,388	101	96	96	95
Total EBS	31.62	3.94E+00	1,558,749,749	1.94E+08	1,174,414,334	1,943,085,165	376	256	256	255
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0

*Differences in sums of estimates and totals are due to rounding.

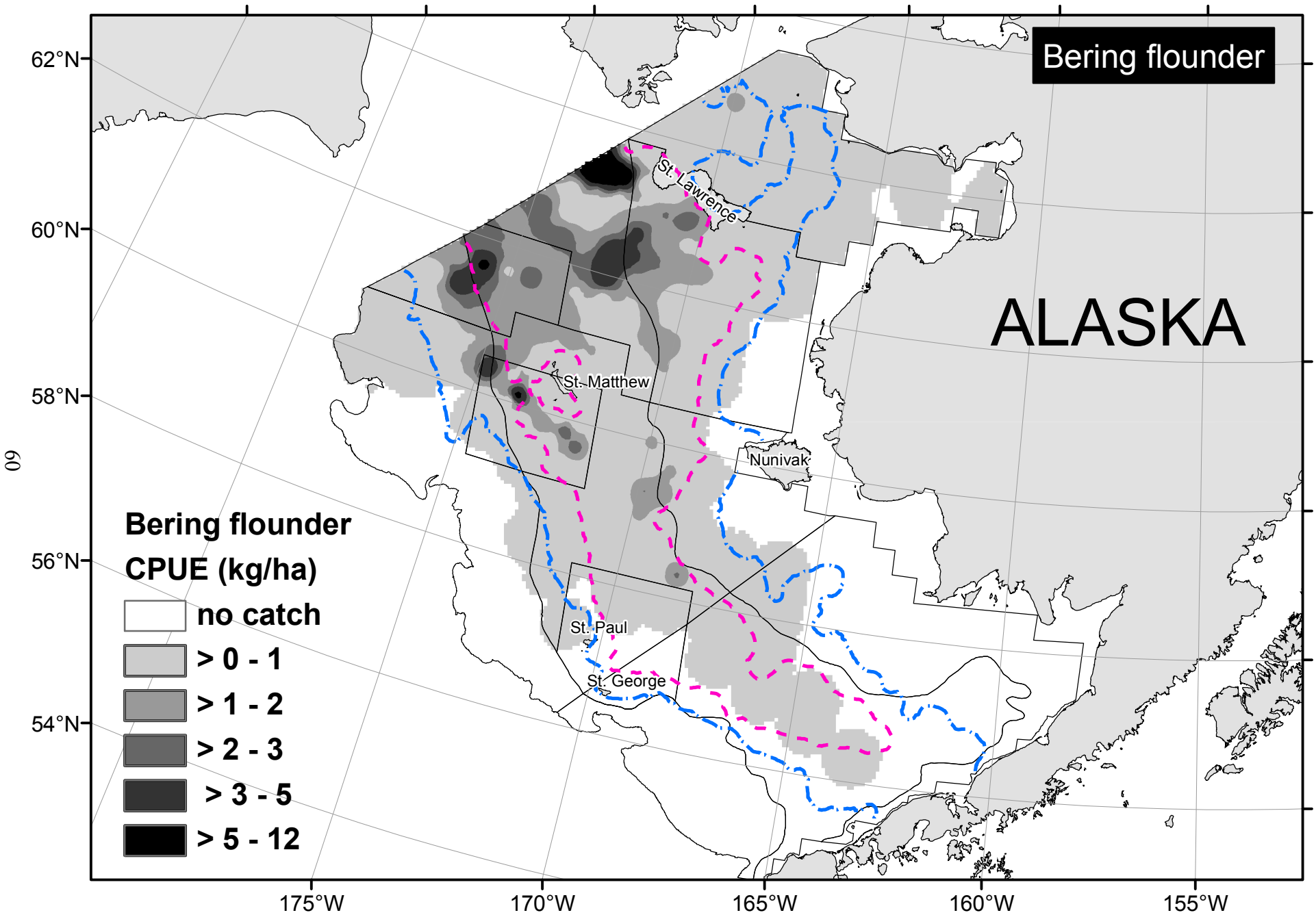

Figure 19. -- Distribution and relative abundance (kg/ha) of **Bering flounder** (*Hippoglossoides robustus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey. The dashed line represents the isotherm for the bottom water temperature -1°C , and the dashed dotted line the 2°C isotherm.

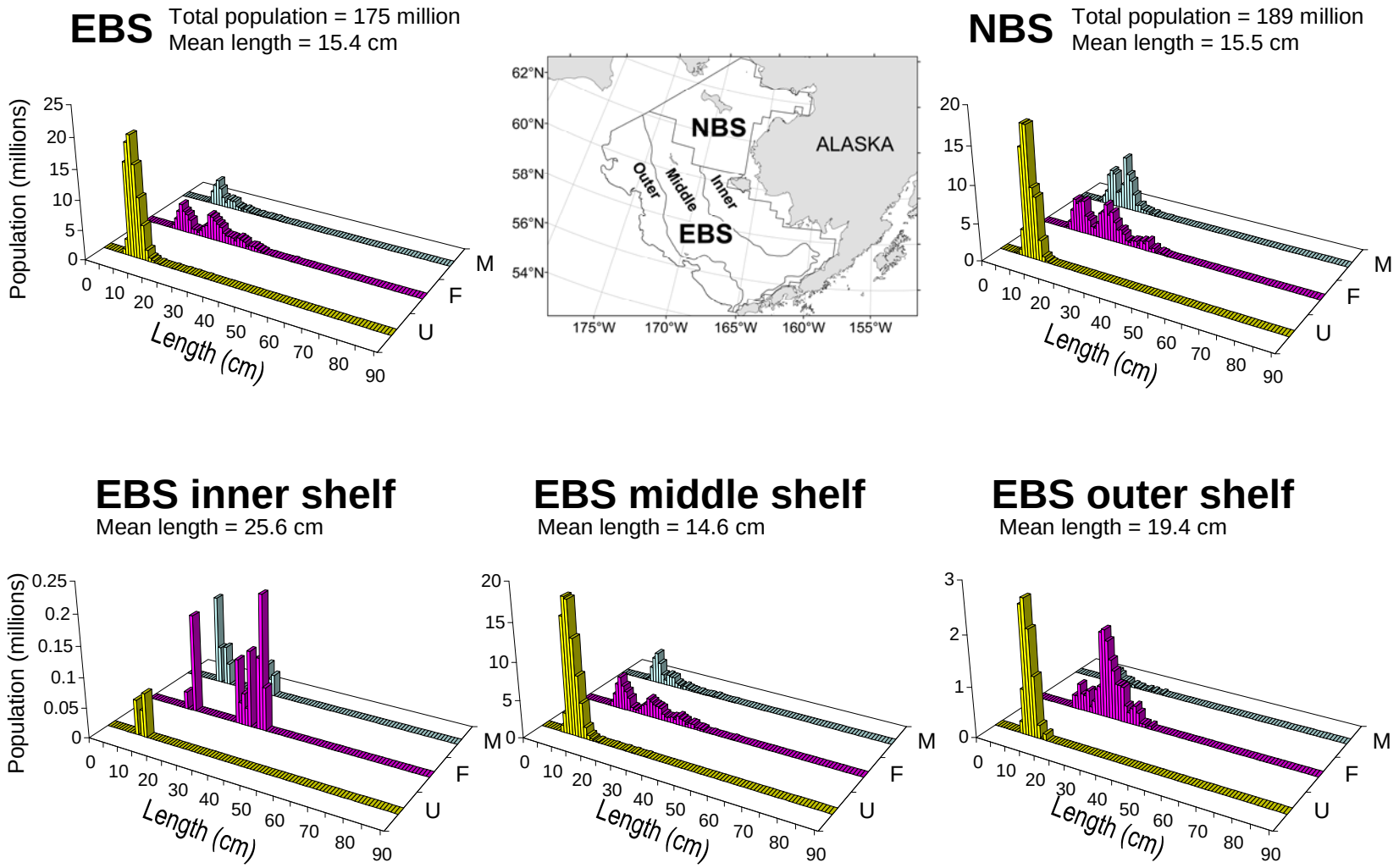

Figure 20. -- Total abundance-at-size and mean length of **Bering flounder** (*Hippoglossoides robustus*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 14a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Bering flounder** (*Hippoglossoides robustus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.01	5.45E-03	63	4.24E+01	0	149	58	3	3	3
EBS 20	0.09	5.24E-02	372	2.15E+02	0	812	31	9	9	9
Subtotal	0.04	1.84E-02	435	2.19E+02	0	883	89	12	12	12
EBS 31	0.01	4.17E-03	89	3.94E+01	11	168	69	9	9	9
EBS 32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
EBS 41	0.53	9.57E-02	3,308	6.00E+02	2,096	4,521	44	40	40	40
EBS 42	0.03	1.38E-02	60	3.32E+01	0	128	31	5	5	5
EBS 43	0.79	3.07E-01	1,669	6.49E+02	316	3,022	22	15	15	15
EBS 82	1.88	3.67E-01	3,375	6.59E+02	1,925	4,825	12	12	12	12
Subtotal	0.37	4.82E-02	8,502	1.10E+03	6,273	10,732	186	81	81	81
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.07	2.67E-02	599	2.36E+02	123	1,076	60	12	12	11
EBS 62	0.70	6.38E-01	448	4.10E+02	0	1,452	7	4	4	4
EBS 90	1.61	5.28E-01	1,867	6.10E+02	424	3,310	8	8	8	8
Subtotal	0.20	5.33E-02	2,914	7.72E+02	1,337	4,491	101	24	24	23
Total EBS	0.24	5.06E-02	11,852	2.50E+03	6,861	16,843	376	117	117	116
NBS 70	0.47	1.01E-01	3,695	8.00E+02	2,078	5,312	58	37	37	37
NBS 71	0.11	3.18E-02	878	2.62E+02	348	1,409	56	36	36	35
NBS 81	2.03	4.99E-01	7,781	1.91E+03	3,857	11,704	28	28	28	28
Total NBS	0.62	1.04E-01	12,354	2.09E+03	8,131	16,577	142	101	101	100

*Differences in sums of estimates and totals are due to rounding.

Table 14b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Bering flounder** (*Hippoglossoides robustus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.03	2.24E-02	256,514	1.75E+05	0	609,350	58	3	3	3
EBS 20	0.33	1.51E-01	1,358,550	6.20E+05	89,760	2,627,341	31	9	9	9
Subtotal	0.14	5.42E-02	1,615,064	6.45E+05	298,932	2,931,196	89	12	12	12
EBS 31	0.45	2.03E-01	4,211,218	1.92E+06	370,826	8,051,610	69	9	9	9
EBS 32	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
EBS 41	10.11	2.58E+00	63,400,100	1.62E+07	30,718,344	96,081,856	44	40	40	40
EBS 42	0.15	8.96E-02	362,565	2.15E+05	0	802,710	31	5	5	5
EBS 43	3.87	1.32E+00	8,169,398	2.78E+06	2,361,805	13,976,991	22	15	15	15
EBS 82	39.58	6.12E+00	71,070,243	1.10E+07	46,884,317	95,256,168	12	12	12	12
Subtotal	6.43	8.66E-01	147,213,523	1.98E+07	107,111,160	187,315,886	186	81	81	81
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.58	2.57E-01	5,074,809	2.26E+06	505,708	9,643,910	60	12	12	11
EBS 62	3.29	2.73E+00	2,117,842	1.76E+06	0	6,414,607	7	4	4	4
EBS 90	16.51	5.72E+00	19,101,951	6.61E+06	3,459,787	34,744,114	8	8	8	8
Subtotal	1.81	4.97E-01	26,294,601	7.21E+06	11,578,047	41,011,155	101	24	24	23
Total EBS	3.55	6.82E-01	175,123,188	3.36E+07	107,898,596	242,347,780	376	117	117	116
NBS 70	4.78	1.09E+00	37,859,092	8.66E+06	20,361,904	55,356,281	58	37	37	37
NBS 71	2.70	7.49E-01	22,284,895	6.19E+06	9,783,218	34,786,572	56	36	36	35
NBS 81	33.67	6.23E+00	129,123,059	2.39E+07	80,111,932	178,134,186	28	28	28	28
Total NBS	9.45	1.31E+00	189,267,046	2.61E+07	136,422,892	242,111,200	142	101	101	100

*Differences in sums of estimates and totals are due to rounding.

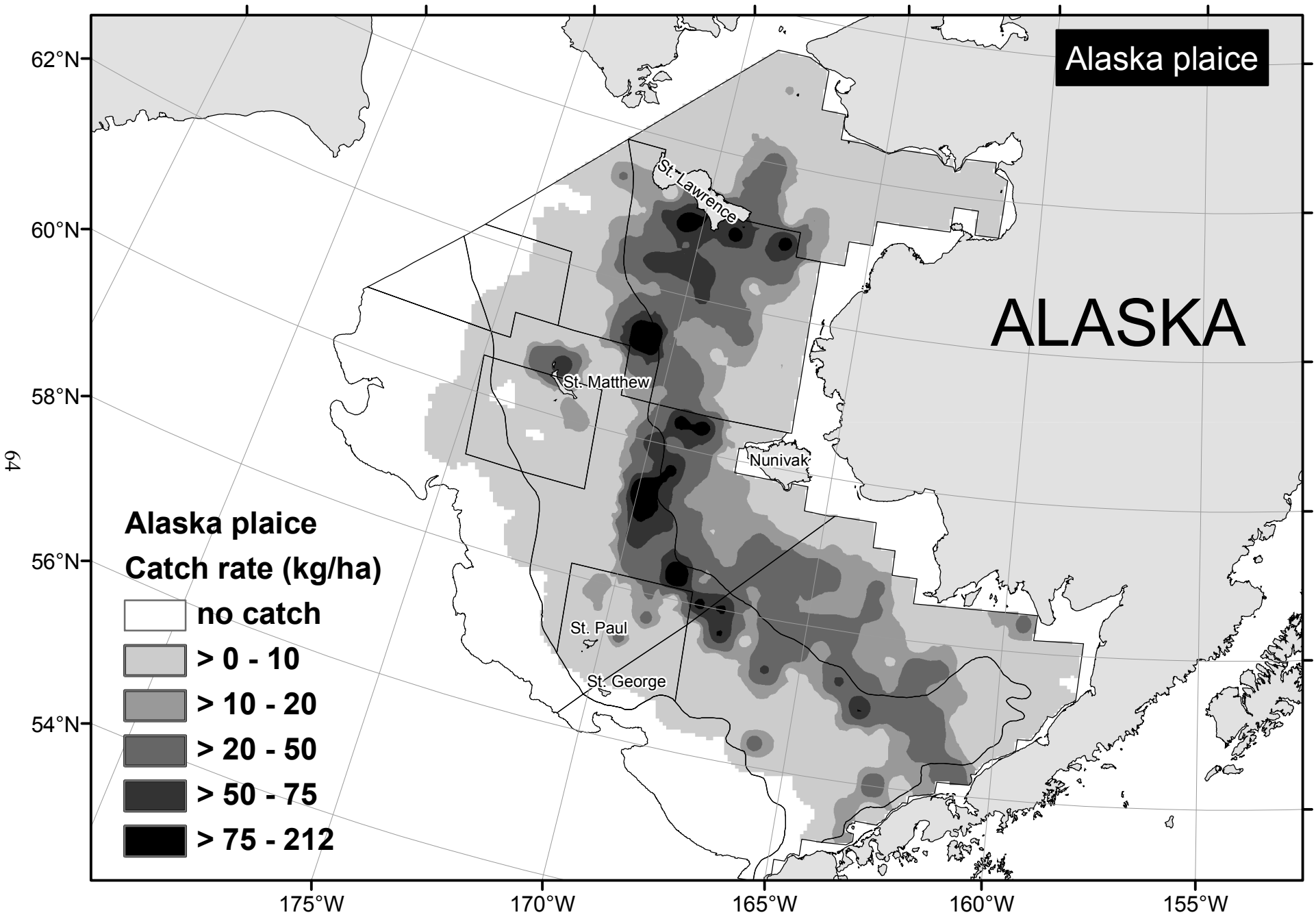

Figure 21. -- Distribution and relative abundance (kg/ha) of **Alaska plaice** (*Pleuronectes quadrituberculatus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

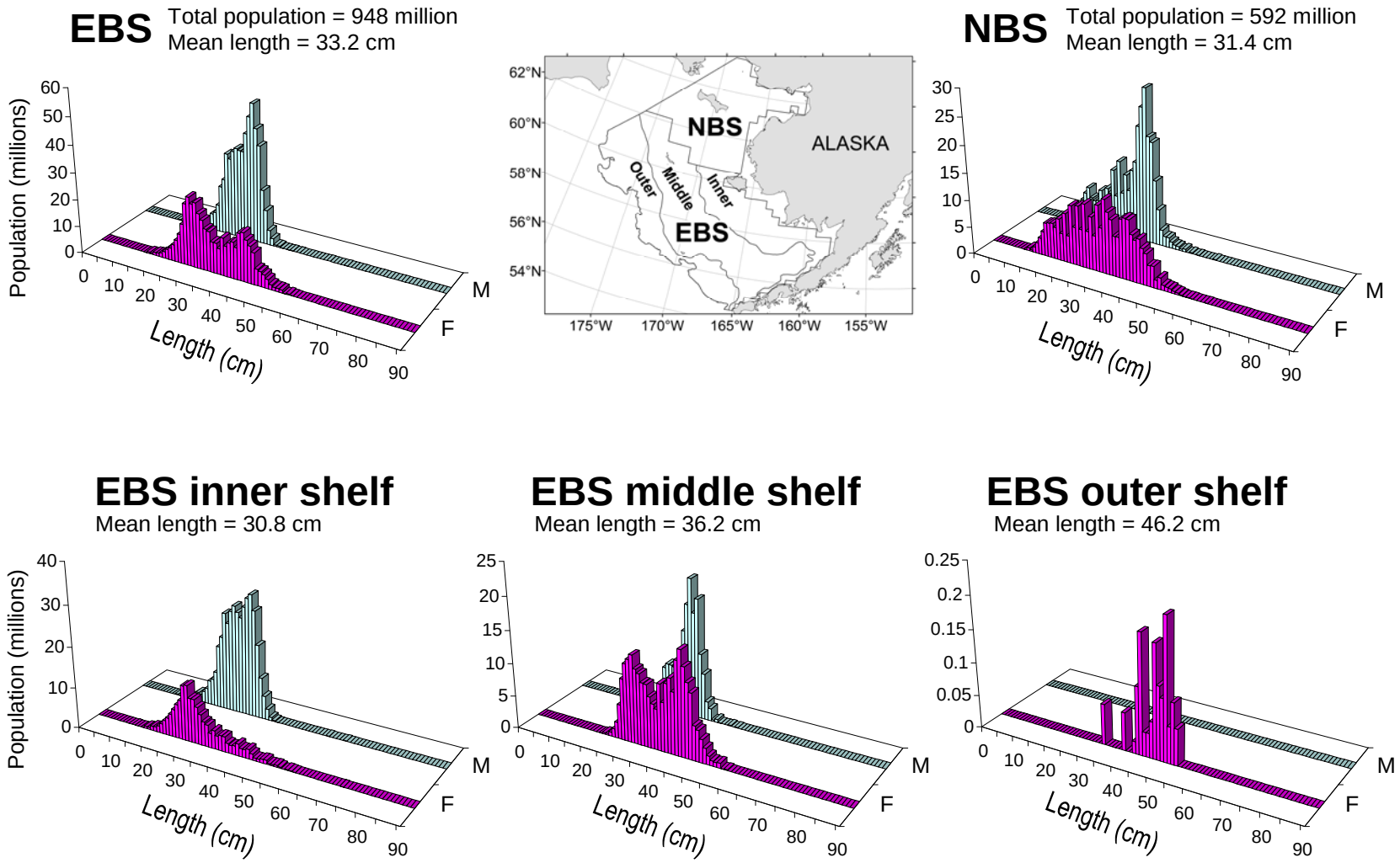

Figure 22. -- Total abundance-at-size and mean length of **Alaska plaice** (*Pleuronectes quadrituberculatus*) by sex (M = male, F = female) or the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 15a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	13.29	1.54E+00	103,527	1.20E+04	79,305	127,749	58	50	50	50
EBS 20	26.05	4.42E+00	106,872	1.81E+04	69,819	143,925	31	31	31	31
Subtotal	17.70	1.83E+00	210,399	2.17E+04	166,450	254,348	89	81	81	81
EBS 31	12.67	2.37E+00	119,737	2.24E+04	74,945	164,529	69	55	55	55
EBS 32	0.40	2.13E-01	351	1.87E+02	0	793	8	4	4	4
EBS 41	22.82	5.53E+00	143,080	3.47E+04	72,984	213,177	44	37	37	37
EBS 42	6.02	1.47E+00	14,456	3.52E+03	7,268	21,644	31	23	23	23
EBS 43	3.57	1.09E+00	7,533	2.31E+03	2,732	12,333	22	12	12	12
EBS 82	0.35	2.33E-01	636	4.19E+02	0	1,558	12	5	5	5
Subtotal	12.48	1.81E+00	285,794	4.15E+04	202,788	368,800	186	136	136	136
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.09	5.56E-02	812	4.90E+02	0	1,802	60	4	4	4
EBS 62	1.56	1.30E+00	1,003	8.38E+02	0	3,157	7	4	4	4
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.13	6.70E-02	1,816	9.70E+02	0	3,815	101	8	8	8
Total EBS	10.10	1.25E+00	498,009	6.16E+04	376,042	619,976	376	225	225	225
NBS 70	24.13	3.14E+00	191,277	2.49E+04	140,928	241,627	58	57	57	57
NBS 71	4.99	1.08E+00	41,175	8.91E+03	23,178	59,173	56	56	56	55
NBS 81	18.45	7.81E+00	70,742	3.00E+04	9,244	132,241	28	21	21	21
Total NBS	15.14	2.00E+00	303,195	4.00E+04	223,241	383,149	142	134	134	133

*Differences in sums of estimates and totals are due to rounding.

Table 15b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Alaska plaice** (*Pleuronectes quadrituberculatus*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	36.05	3.97E+00	280,746,245	3.09E+07	218,220,662	343,271,828	58	50	50	50
EBS 20	60.80	8.94E+00	249,432,908	3.67E+07	174,521,603	324,344,214	31	31	31	31
Subtotal	44.59	4.04E+00	530,179,153	4.80E+07	433,192,949	627,165,358	89	81	81	81
EBS 31	18.88	3.47E+00	178,430,423	3.28E+07	112,814,867	244,045,978	69	55	55	55
EBS 32	0.49	2.17E-01	429,882	1.90E+05	0	879,564	8	4	4	4
EBS 41	33.09	8.44E+00	207,498,385	5.29E+07	100,492,960	314,503,810	44	37	37	37
EBS 42	8.63	2.00E+00	20,720,028	4.80E+06	10,909,134	30,530,922	31	23	23	23
EBS 43	4.13	1.54E+00	8,722,285	3.25E+06	1,954,289	15,490,282	22	12	12	12
EBS 82	0.32	1.97E-01	571,027	3.53E+05	0	1,348,470	12	5	5	5
Subtotal	18.18	2.73E+00	416,372,030	6.26E+07	291,255,396	541,488,664	186	136	136	136
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	0.07	3.89E-02	598,690	3.42E+05	0	1,290,827	60	4	4	4
EBS 62	1.17	9.56E-01	749,810	6.14E+05	0	2,329,604	7	4	4	4
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	8	0	0	0
Subtotal	0.09	4.85E-02	1,348,500	7.03E+05	0	2,797,629	101	8	8	8
Total EBS	19.23	2.12E+00	947,899,683	1.05E+08	740,642,856	1,155,156,510	376	225	225	225
NBS 70	51.04	6.14E+00	404,530,192	4.87E+07	306,165,791	502,894,593	58	57	57	57
NBS 71	11.13	1.92E+00	91,924,002	1.59E+07	59,841,306	124,006,698	56	56	56	55
NBS 81	25.02	1.20E+01	95,961,330	4.60E+07	1,502,411	190,420,250	28	21	21	21
Total NBS	29.59	3.44E+00	592,415,525	6.88E+07	454,721,843	730,109,207	142	134	134	133

*Differences in sums of estimates and totals are due to rounding.

more knowledge about the variability in seasonal migratory patterns of Alaska plaice between the EBS and NBS.

Greenland Turbot (*Reinhardtius hippoglossoides*)

Greenland turbot has a circumpolar distribution and, on the Pacific side, is most abundant in the Bering Sea continental shelf and upper slope (Allen and Smith 1988). The total estimated biomass on the Bering Sea continental shelf was 23,538 t (Table 16a) with the highest catch rates of Greenland turbot in the northernmost section of the EBS outer shelf (Fig. 23). Eighty-four percent of the total shelf biomass was on the EBS outer shelf, 15% on the middle shelf, and the remaining 1% on the combined EBS inner shelf and the NBS (Table 16a, Fig. 23). The estimated number of Greenland turbot on the EBS shelf was 138 million (Table 16b) which was the highest population abundance in the 29-year time series. As is generally the case on the EBS shelf BT survey, a majority (98%) of the Greenland turbot were smaller than 50 cm (Fig. 24). In contrast with the EBS continental slope BT survey, a majority of Greenland turbot are > 60 cm (Fig. 67 in Hoff and Britt 2011). In general, the maximum size of Greenland turbot differs by sex being about 80 cm for males and 110 cm for females.

Sizes-at-age extrapolated from lengths of Greenland turbot observed in BT surveys (Gregg et al. 2006, Ianelli et al. 2010) are consistent with a hypothesized framework for spawning, recruitment, and ontogentic migration (Alton et al. 1988, Sohn et al. 2010). Greenland turbot spawn on the continental slope between Unimak Pass and the Pribilof Islands (Alton et al. 1988). Once hatched from eggs, the larvae and juveniles undergo a prolonged pelagic phase drifting northward in the Bering Slope Current to the vicinity of St. Matthew Island, where they settle on nursery grounds (Sohn et al. 2010). After spending 4 to 5 years on

the shelf, Greenland turbot undergo an ontogenetic migration down the slope and back toward the spawning area in the south (Alton et al. 1988).

Arrowtooth Flounder (*Atheresthes stomias*)

Arrowtooth flounder were not present within the NBS but were distributed in the EBS along the outer shelf and at the deeper end of the middle shelf with a small portion of the population in southern Bristol Bay (Fig. 25). The cross-shelf spatial distribution of arrowtooth flounder may be affected by the extent of the cold bottom water ≤ 1°C on the EBS middle shelf. In 2010, a cold year, the highest catch rates were seaward of the 1°C isotherm and arrowtooth flounder were absent from more than half of the stations sampled in the middle shelf (Fig. 25). In contrast, 2005 was the warmest year on record and arrowtooth flounder were more broadly distributed across the middle shelf south of the 1°C isotherm near St. Matthew Island (Lauth and Acuna 2007).

The 2010 estimates of total survey biomass increased from 0.41 million t in 2009 to 0.53 million t (Table 17a), as did the estimated survey population number from 0.9 billion to about 1.1 billion (Table 17b). The lengths of arrowtooth flounder ranged from 7 to 90 cm and the mean size for the population was 34.7 cm (Fig. 26). In addition to being found on the shelf, arrowtooth flounder are broadly distributed along the EBS continental slope where lengths exceed 30 cm and the mean length is much higher (46.8 cm; Fig. 69 in Hoff and Britt 2011). Similar to Greenland turbot, the maximum size of females (80 cm) is about 30 cm greater than males (50 cm; Fig. 26 and Hoff and Britt 2011). Another consistent pattern evident in all Alaska BT surveys is that there is a higher ratio of females to males in BT catches, which may be due to males having a higher mortality rate than females (Wilderbuer et al. 2010).

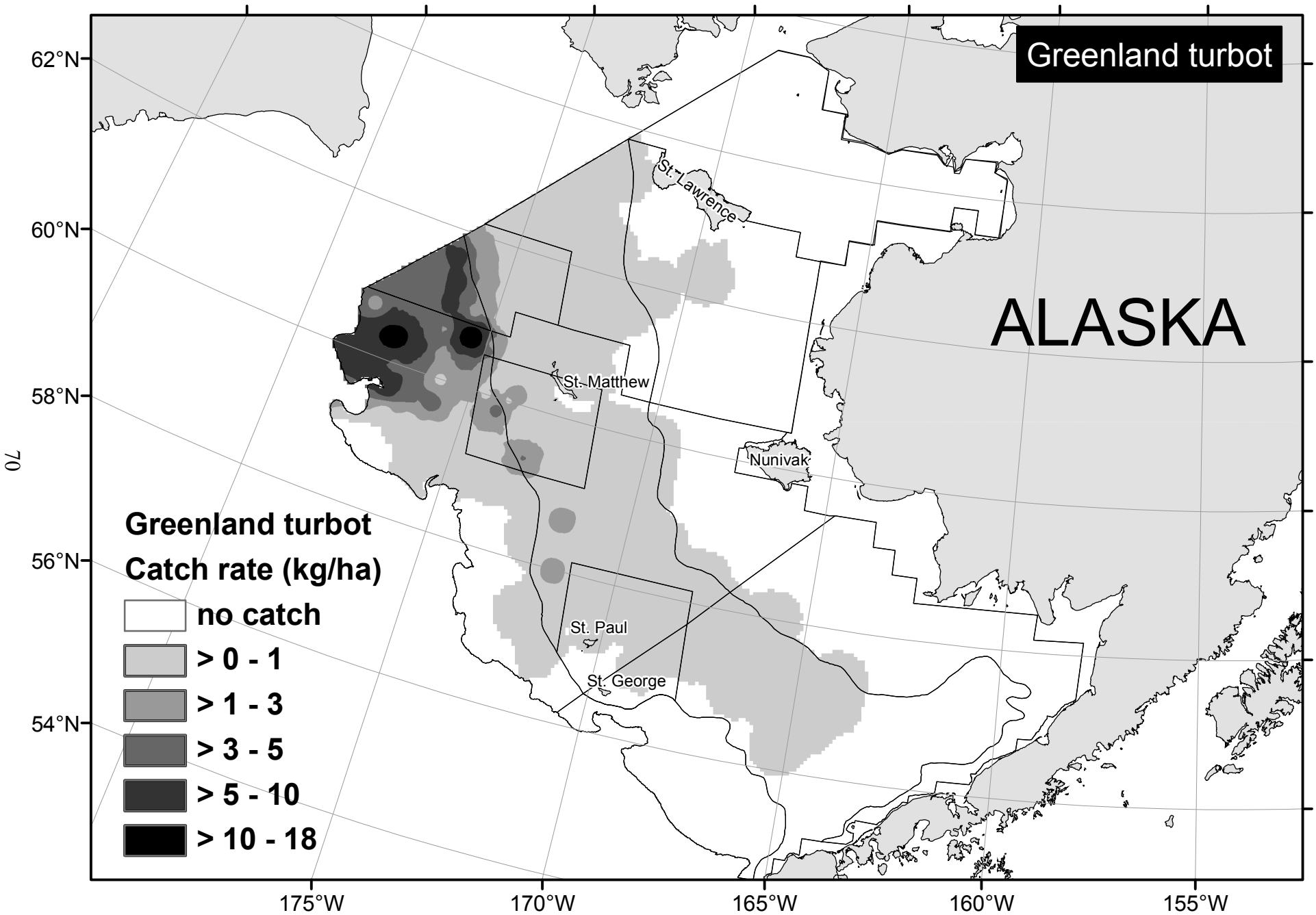

Figure 23. -- Distribution and relative abundance (kg/ha) of **Greenland turbot** (*Reinhardtius hippoglossoides*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

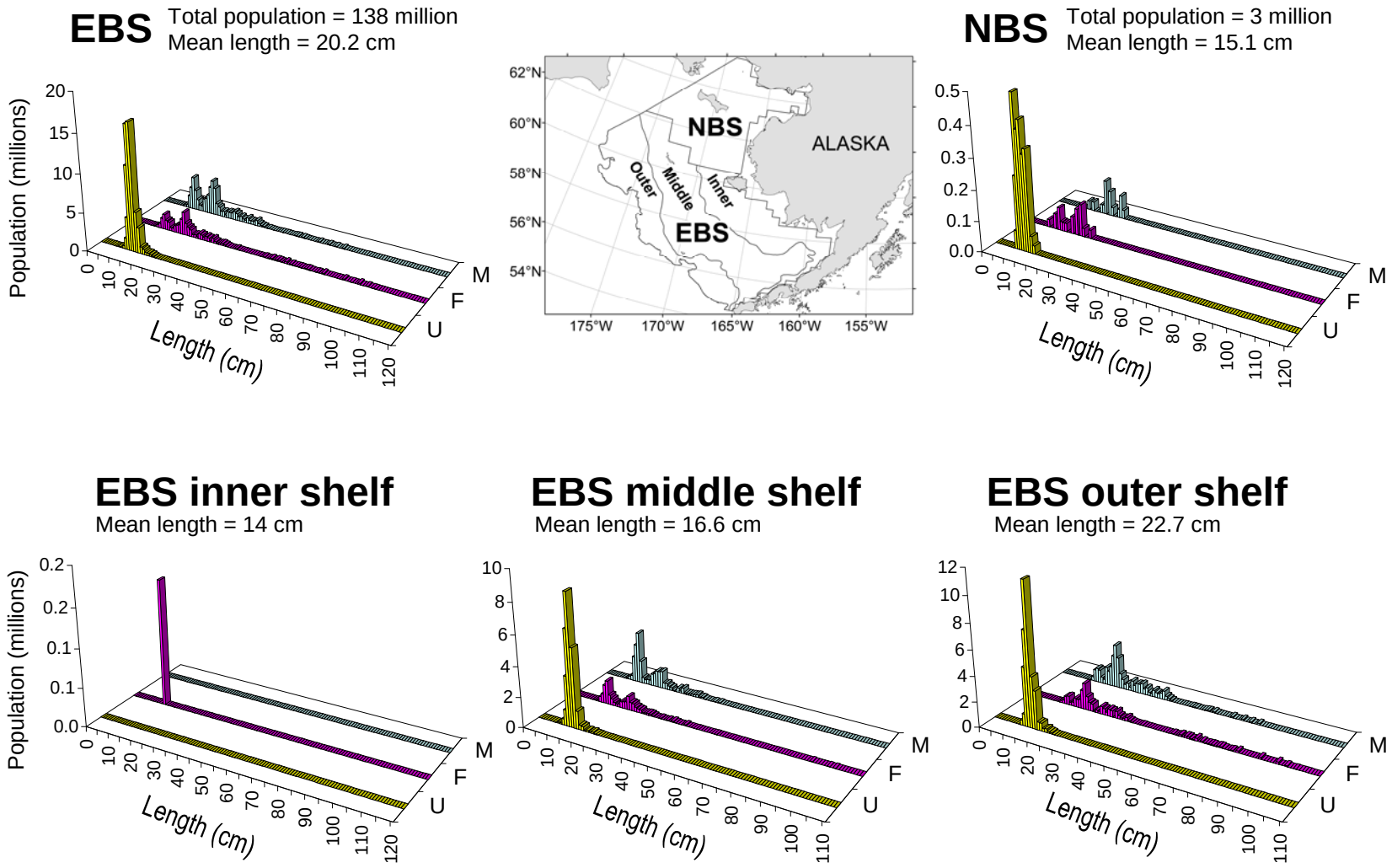

Figure 24. -- Total abundance-at-size and mean length of **Greenland turbot** (*Reinhardtius hippoglossoides*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 16a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.00	2.88E-04	2	2.24E+00	0	7	58	1	1	1
EBS 20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	1.88E-04	2	2.24E+00	0	7	89	1	1	1
EBS 31	0.00	1.40E-03	33	1.33E+01	7	60	69	15	15	15
EBS 32	0.01	3.51E-03	4	3.08E+00	0	12	8	3	3	3
EBS 41	0.22	8.17E-02	1,407	5.12E+02	373	2,442	44	35	35	35
EBS 42	0.05	1.06E-02	110	2.56E+01	58	162	31	17	17	16
EBS 43	0.53	1.70E-01	1,118	3.58E+02	370	1,865	22	16	16	16
EBS 82	0.49	1.62E-01	887	2.91E+02	240	1,535	12	12	12	12
Subtotal	0.16	3.01E-02	3,560	6.90E+02	2,181	4,940	186	98	98	97
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	1.59	4.39E-01	14,046	3.87E+03	6,224	21,868	60	31	31	31
EBS 62	1.35	4.88E-01	865	3.13E+02	98	1,632	7	7	7	7
EBS 90	4.27	5.01E-01	4,940	5.79E+02	3,571	6,310	8	8	8	8
Subtotal	1.37	3.01E-02	19,852	3.93E+03	12,000	27,704	101	46	46	46
Total EBS	0.48	8.09E-02	23,414	3.99E+03	15,442	31,387	376	145	145	144
NBS 70	0.00	0.00E+00	2	1.71E+00	0	5	58	2	2	2
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.03	0.00E+00	122	4.89E+01	22	222	28	16	16	16
Total NBS	0.01	0.00E+00	124	4.89E+01	25	223	142	18	18	18

*Differences in sums of estimates and totals are due to rounding.

Table 16b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Greenland turbot** (*Reinhardtius hippoglossoides*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.02	2.08E-02	161,904	1.62E+05	0	489,113	58	1	1	1
EBS 20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.01	1.36E-02	161,904	1.62E+05	0	492,513	89	1	1	1
EBS 31	0.19	5.42E-02	1,750,897	5.12E+05	726,400	2,775,394	69	15	15	15
EBS 32	0.35	2.35E-01	308,687	2.06E+05	0	796,121	8	3	3	3
EBS 41	3.57	8.40E-01	22,412,908	5.27E+06	11,765,418	33,060,398	44	35	35	35
EBS 42	2.12	5.90E-01	5,090,885	1.42E+06	2,198,699	7,983,071	31	17	17	16
EBS 43	6.58	1.53E+00	13,889,308	3.22E+06	7,170,029	20,608,586	22	16	16	16
EBS 82	7.69	1.25E+00	13,811,606	2.24E+06	8,830,081	18,793,130	12	12	12	12
Subtotal	2.50	2.94E-01	57,264,290	6.74E+06	43,782,147	70,746,434	186	98	98	97
EBS 50	0.00	0.00E+00	0	0.00E+00	0	0	26	0	0	0
EBS 61	4.98	1.15E+00	43,934,605	1.01E+07	23,529,927	64,339,284	60	31	31	31
EBS 62	14.78	2.51E+00	9,499,031	1.61E+06	5,552,224	13,445,839	7	7	7	7
EBS 90	23.11	6.94E+00	26,738,410	8.03E+06	7,751,540	45,725,279	8	8	8	8
Subtotal	5.53	2.94E-01	80,172,046	1.30E+07	54,172,774	106,171,318	101	46	46	46
Total EBS	2.79	2.98E-01	137,598,240	1.47E+07	108,237,084	166,959,397	376	145	145	144
NBS 70	0.02	0.00E+00	124,698	9.66E+04	0	319,976	58	2	2	2
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.84	0.00E+00	3,226,517	1.03E+06	1,122,590	5,330,444	28	16	16	16
Total NBS	0.17	0.00E+00	3,351,215	1.03E+06	1,269,892	5,432,539	142	18	18	18

*Differences in sums of estimates and totals are due to rounding.

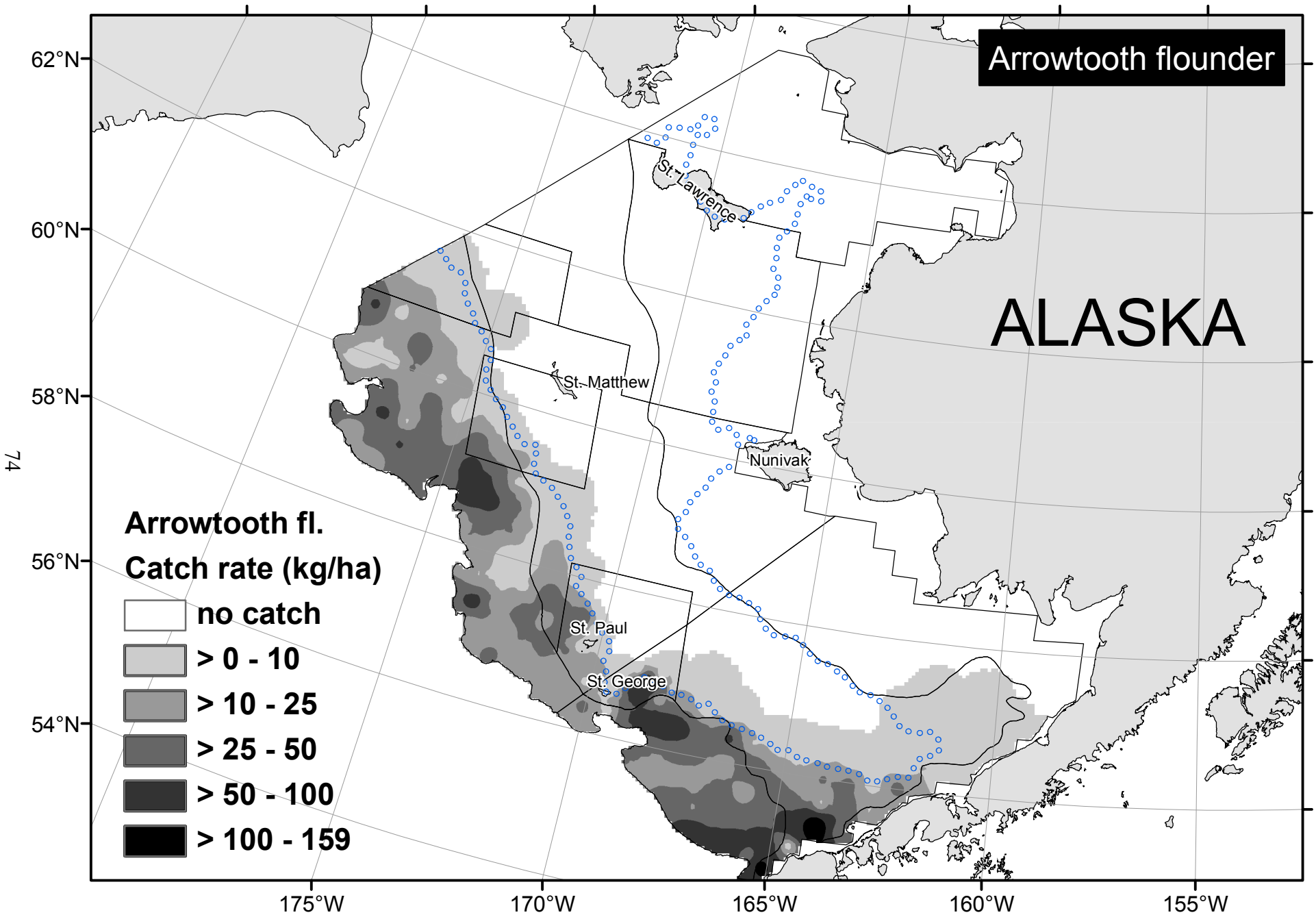

Figure 25. -- Distribution and relative abundance (kg/ha) of **arrowtooth flounder** (*Atheresthes stomias*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey. The line with circles represents the isotherm for the bottom water temperature 1°C .

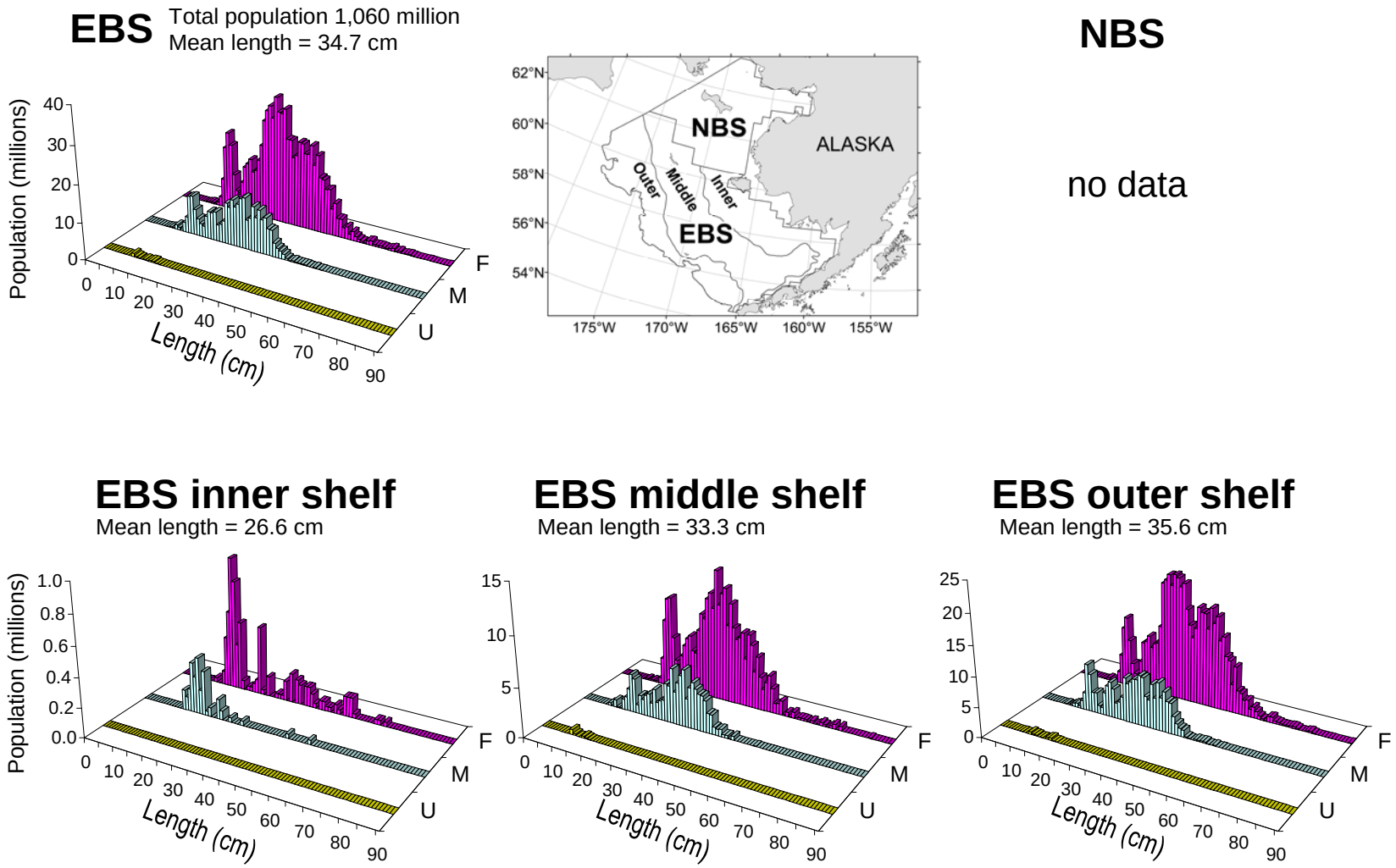

Figure 26. -- Total abundance-at-size and mean length of **arrowtooth flounder** (*Atheresthes stomias*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 17a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **arrowtooth flounder** (*Atheresthes stomias*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.35	2.42E-01	2,715	1.89E+03	0	6,528	58	4	4	4
EBS 20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.23	1.59E-01	2,715	1.89E+03	0	6,488	89	4	4	4
EBS 31	11.31	3.26E+00	106,905	3.08E+04	45,287	168,523	69	35	35	34
EBS 32	23.27	1.60E+01	20,416	1.41E+04	0	53,681	8	5	5	5
EBS 41	2.13	1.07E+00	13,371	6.69E+03	0	26,896	44	7	7	7
EBS 42	6.53	2.18E+00	15,685	5.24E+03	4,971	26,400	31	11	11	11
EBS 43	1.03	7.58E-01	2,175	1.60E+03	0	5,512	22	2	2	2
EBS 82	0.00	3.70E-04	1	6.64E-01	0	2	12	1	1	0
Subtotal	6.92	1.53E+00	158,553	3.50E+04	88,644	228,462	186	61	61	59
EBS 50	37.15	4.38E+00	144,113	1.70E+04	109,078	179,147	26	26	26	26
EBS 61	24.01	2.30E+00	211,642	2.03E+04	170,586	252,698	60	59	59	59
EBS 62	11.47	5.15E+00	7,375	3.31E+03	0	15,883	7	6	6	6
EBS 90	3.69	1.86E+00	4,269	2.16E+03	0	9,368	8	5	5	5
Subtotal	25.35	1.85E+00	367,399	2.68E+04	313,825	420,972	101	96	96	96
Total EBS	10.73	8.94E-01	528,667	4.41E+04	441,391	615,942	376	161	161	159
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	0	0	0	0

*Differences in sums of estimates and totals are due to rounding.

Table 17b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **arrowtooth flounder** (*Atheresthes stomias*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	1.08	7.77E-01	8,433,200	6.05E+06	0	20,665,335	58	4	4	4
EBS 20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.71	5.09E-01	8,433,200	6.05E+06	0	20,538,232	89	4	4	4
EBS 31	27.43	7.50E+00	259,281,034	7.09E+07	117,411,948	401,150,120	69	35	35	34
EBS 32	50.31	3.15E+01	44,141,128	2.76E+07	0	109,513,614	8	5	5	5
EBS 41	3.16	1.53E+00	19,783,203	9.62E+06	334,161	39,232,244	44	7	7	7
EBS 42	15.63	4.98E+00	37,530,134	1.20E+07	13,057,285	62,002,984	31	11	11	11
EBS 43	1.41	1.00E+00	2,975,415	2.12E+06	0	7,398,836	22	2	2	2
EBS 82	0.02	1.68E-02	30,187	3.02E+04	0	97,442	12	1	1	0
Subtotal	15.88	3.39E+00	363,741,100	7.77E+07	208,356,524	519,125,676	186	61	61	59
EBS 50	93.97	9.11E+00	364,549,238	3.53E+07	291,785,799	437,312,678	26	26	26	26
EBS 61	35.25	3.71E+00	310,711,118	3.27E+07	244,664,690	376,757,546	60	59	59	59
EBS 62	14.63	6.99E+00	9,404,831	4.50E+06	0	20,964,423	7	6	6	6
EBS 90	3.09	1.49E+00	3,577,048	1.73E+06	0	7,657,690	8	5	5	5
Subtotal	47.49	3.34E+00	688,242,235	4.84E+07	591,519,386	784,965,085	101	96	96	96
Total EBS	21.51	1.86E+00	1,060,416,536	9.17E+07	878,821,799	1,242,011,272	376	161	161	159
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	0	0	0	0

*Differences in sums of estimates and totals are due to rounding.

Kamchatka Flounder (*Atheresthes evermanni*)

Kamchatka flounder are similar in appearance to the congeneric arrowtooth flounder (Yang 1988), and it wasn't until 1994 that field characters were established to reliably distinguish between the two species during AFSC BT surveys. The spatial distribution of the two species overlap but Kamchatka flounder generally has higher catch rates on the northwest relative to the southeast shelf (Fig. 27). Trends in relative abundance are similar but the biomass and population size of Kamchatka flounder are about one-tenth that of arrowtooth flounder. From 2009 to 2010, the total survey biomass of Kamchatka flounder increased from 50,000 to 58,000 t (Table 18a) and the population increased from 84 million to 132 million fish (Table 18b). The measured lengths of Kamchatka flounder on the EBS shelf ranged from 7 to 84 cm and had a mean of 30.6 cm (Fig. 28). Similar to arrowtooth flounder, the portion of the Kamchatka flounder population inhabiting the EBS slope has a greater mean length (55.2 cm; Hoff and Britt 2011) than on the shelf and females attain a greater maximum size (Fig. 28). A characteristic that distinguishes Kamchatka from arrowtooth flounder is that the proportion of females to males in the Kamchatka flounder population is roughly equal (Fig. 28).

Pacific Halibut (*Hippoglossus stenolepis*)

Pacific halibut were present at 78% of the stations sampled in the EBS with the highest density catches along the inner southeastern half of the shelf (Fig. 29). Other than some relatively high catch rates north of Nunivak Island close to shore (Fig. 29), where bottom water temperatures were > 3°C (Fig. 6), Pacific halibut were scarce in the NBS, being present at only 28% of the stations sampled. The 2010 estimated biomass of 198,000 t (Table 19a) was 60% greater than the mean for 1982-2009 (124,000 t) and the highest in the EBS time series. The

2010 population of 107 million halibut (Table 19b) was a drop in number from the years 2006-2008 (108-235 million), but it was an increase from 2009 (102 million) and it was 95% greater than the long-term average population size from 1982 to 2009 (55 million). Increases in abundance during recent years and the presence of several size modes (Fig. 30) indicate the presence of several strong year classes of Pacific halibut on the EBS shelf.

Research and management of Pacific halibut stocks is the responsibility of the IPHC and their stock assessments include all available fisheries and scientific survey data from the U.S. and Canada (Hare 2010). The AFSC BT survey provides an important estimate of Pacific halibut abundance-at-length on the EBS shelf, especially for tracking strong incoming year classes. However, the BT survey gear is size-selective for Pacific halibut (< 100 cm; Fig. 30) and an adjustment for size-selectivity must be made before BT data from the EBS shelf can be incorporated into the Pacific halibut stock assessment model (Hare 2010). In 2006, the IPHC standardized setline survey added 100 EBS shelf stations for a comparison to the area swept estimates from our BT survey (Clark and Hare 2007). The comparison study was used to derive a size selectivity schedule that was applied to the EBS BT survey data to create an index of shelf abundance for the Pacific halibut stock assessment model (Hare 2010).

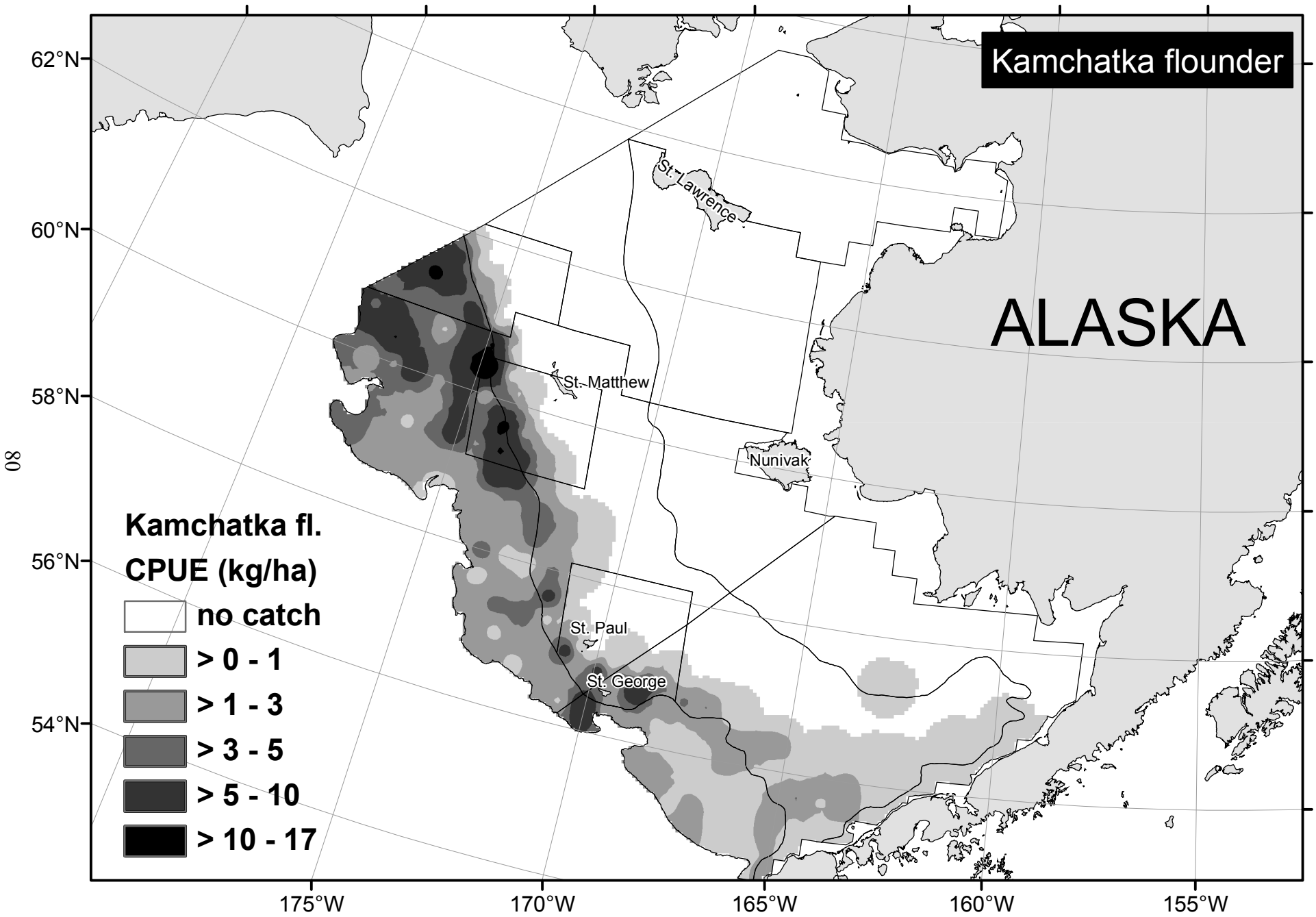

Figure 27. -- Distribution and relative abundance (kg/ha) of **Kamchatka flounder** (*Atheresthes evermanni*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

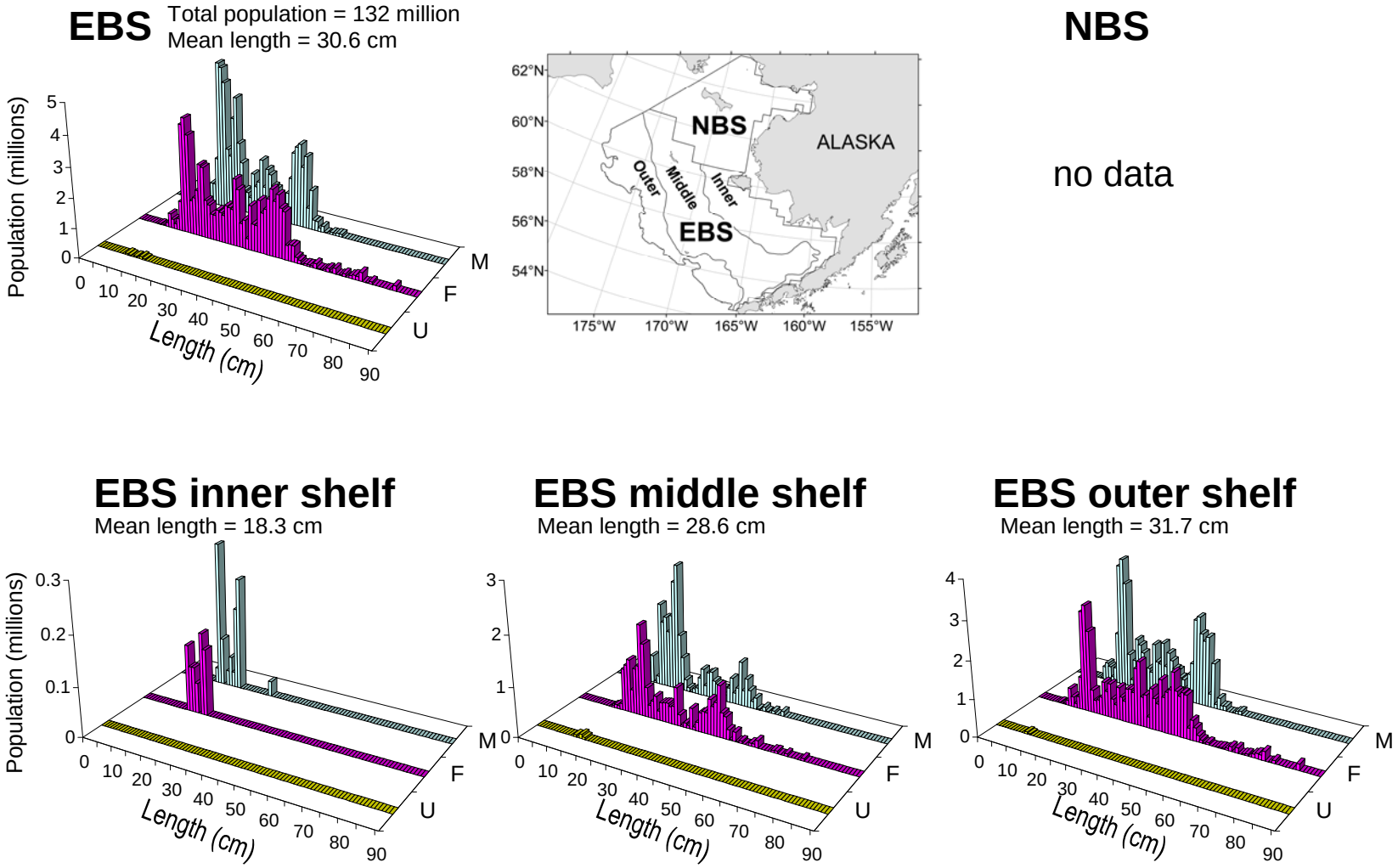

Figure 28. -- Total abundance-at-size and mean length of **Kamchatka flounder** (*Atheresthes evermanni*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 18a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	5.50	9.61E-01	6,360	1.11E+03	3,729	8,990	58	4	4	4
EBS 20	0.01	6.73E-03	90	5.24E+01	0	196	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
EBS 31	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
EBS 32	0.43	1.01E-01	4,080	9.50E+02	2,179	5,981	69	25	25	25
EBS 41	2.79	1.24E+00	2,445	1.09E+03	0	5,014	8	6	6	6
EBS 42	0.63	2.81E-01	3,974	1.76E+03	408	7,539	44	9	9	9
EBS 43	0.66	3.04E-01	1,580	7.29E+02	90	3,069	31	7	7	7
EBS 82	7.53	2.09E+00	4,843	1.34E+03	1,552	8,134	7	7	7	7
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
EBS 50	1.58	5.08E-01	3,339	1.07E+03	1,103	5,575	22	9	9	9
EBS 61	1.37	3.55E-01	5,311	1.38E+03	2,469	8,154	26	26	26	26
EBS 62	2.98	3.05E-01	26,267	2.69E+03	20,836	31,697	60	59	59	59
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Total EBS	1.18	8.85E-02	58,287	4.36E+03	49,647	66,927	376	160	160	160
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0

*Differences in sums of estimates and totals are due to rounding.

Table 18b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Kamchatka flounder** (*Atheresthes evermanni*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	0.21	1.20E-01	1,638,289	9.34E+05	0	3,525,959	58	4	4	4
EBS 20	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
EBS 31	0.00	0.00E+00	0	0.00E+00	0	0	31	0	0	0
EBS 32	3.04	8.18E-01	28,696,793	7.73E+06	13,233,514	44,160,073	69	25	25	25
EBS 41	6.13	3.00E+00	5,378,878	2.63E+06	0	11,594,677	8	6	6	6
EBS 42	0.62	2.71E-01	3,859,756	1.70E+06	431,723	7,287,789	44	9	9	9
EBS 43	1.14	5.29E-01	2,735,772	1.27E+06	140,076	5,331,467	31	7	7	7
EBS 82	6.99	1.59E+00	4,495,770	1.02E+06	1,999,800	6,991,740	7	7	7	7
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
EBS 50	1.39	4.64E-01	2,939,107	9.79E+05	897,534	4,980,680	22	9	9	9
EBS 61	8.37	1.16E+00	32,474,877	4.51E+06	23,169,037	41,780,717	26	26	26	26
EBS 62	4.99	4.10E-01	43,946,967	3.61E+06	36,649,417	51,244,516	60	59	59	59
EBS 90	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
Subtotal	0.00	0.00E+00	0	0.00E+00	0	0	12	0	0	0
Total EBS	2.68	2.11E-01	132,195,874	1.04E+07	111,566,660	152,825,087	376	160	160	160
NBS 70	0.00	0.00E+00	0	0.00E+00	0	0	58	0	0	0
NBS 71	0.00	0.00E+00	0	0.00E+00	0	0	56	0	0	0
NBS 81	0.00	0.00E+00	0	0.00E+00	0	0	28	0	0	0
Total NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0

*Differences in sums of estimates and totals are due to rounding.

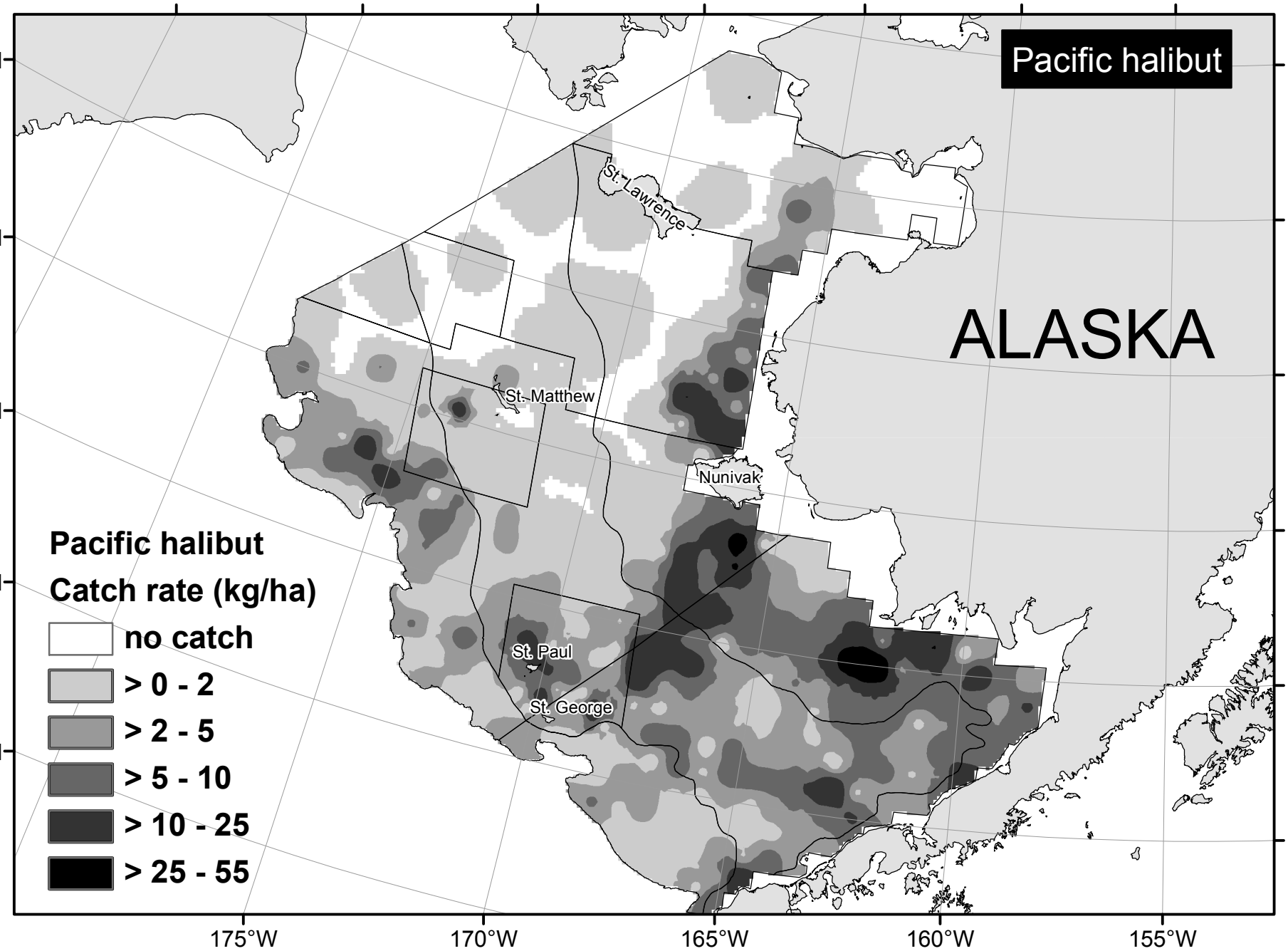

Figure 29. -- Distribution and relative abundance (kg/ha) of **Pacific halibut** (*Hippoglossus stenolepis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

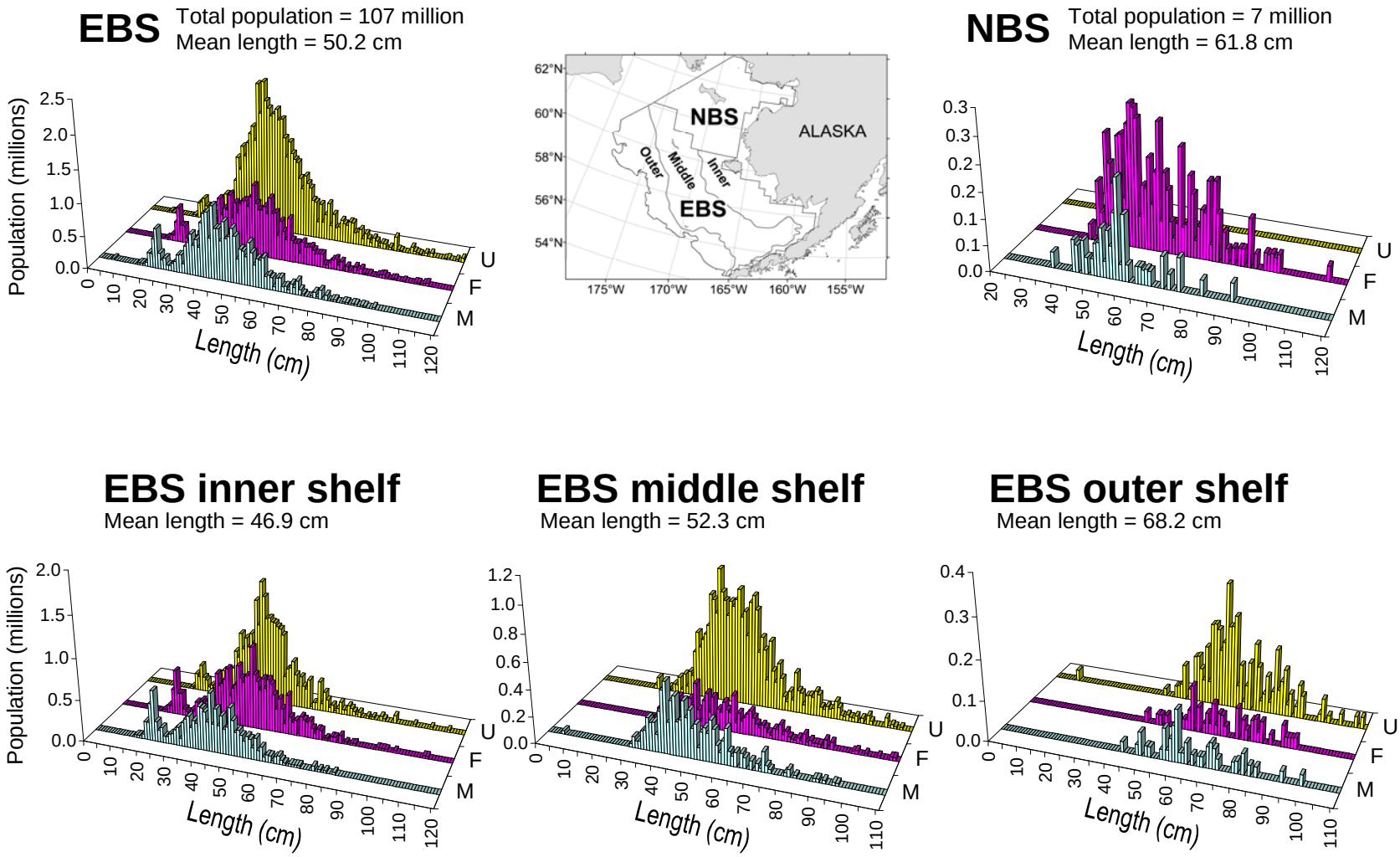

Figure 30. -- Total abundance-at-size and mean length of **Pacific halibut** (*Hippoglossus stenolepis*) by sex (M = male, F = female, U = unsexed) for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey and by shelf location for the EBS.

Table 19a. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	8.44	1.27E+00	65,690	9.85E+03	45,778	85,601	58	56	56	56
EBS 20	5.69	1.49E+00	23,344	6.11E+03	10,858	35,830	31	23	23	23
Subtotal	7.49	9.75E-01	89,034	1.16E+04	65,843	112,225	89	79	79	79
EBS 31	5.55	5.86E-01	52,459	5.54E+03	41,371	63,547	69	68	68	68
EBS 32	5.20	2.78E+00	4,566	2.44E+03	0	10,341	8	6	6	6
EBS 41	0.99	2.56E-01	6,208	1.60E+03	2,965	9,451	44	24	24	24
EBS 42	4.89	8.19E-01	11,735	1.97E+03	7,720	15,750	31	31	31	31
EBS 43	1.13	8.29E-01	2,388	1.75E+03	0	6,026	22	12	12	12
EBS 82	0.01	1.07E-02	19	1.92E+01	0	61	12	1	1	1
Subtotal	3.38	2.97E-01	77,375	6.80E+03	63,781	90,969	186	142	142	142
EBS 50	1.74	2.96E-01	6,756	1.15E+03	4,387	9,124	26	23	23	23
EBS 61	2.65	4.50E-01	23,318	3.97E+03	15,296	31,339	60	41	41	41
EBS 62	2.75	1.15E+00	1,765	7.41E+02	0	3,670	7	6	6	6
EBS 90	0.09	8.81E-02	102	1.02E+02	0	351	8	1	1	1
Subtotal	2.20	2.90E-01	31,941	4.20E+03	23,542	40,339	101	71	71	71
Total EBS	4.02	3.08E-01	198,349	1.52E+04	168,339	228,360	376	292	292	292
NBS 70	2.48	6.82E-01	19,683	5.41E+03	8,751	30,615	58	25	25	25
NBS 71	0.42	1.78E-01	3,441	1.47E+03	463	6,419	56	10	10	10
NBS 81	0.05	2.23E-02	203	8.55E+01	28	379	28	5	5	5
Total NBS	1.17	2.80E-01	23,327	5.61E+03	12,113	34,541	142	40	40	40

*Differences in sums of estimates and totals are due to rounding.

Table 19b. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for **Pacific halibut** (*Hippoglossus stenolepis*) by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Stratum	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
EBS 10	6.65	1.12E+00	51,763,890	8.75E+06	34,082,877	69,444,904	58	56	56	56
EBS 20	2.43	7.24E-01	9,949,140	2.97E+06	3,880,411	16,017,870	31	23	23	23
Subtotal	5.19	7.77E-01	61,713,031	9.24E+06	43,233,711	80,192,350	89	79	79	79
EBS 31	3.05	3.62E-01	28,844,733	3.42E+06	22,009,390	35,680,076	69	68	68	68
EBS 32	1.74	1.02E+00	1,530,575	8.96E+05	0	3,649,988	8	6	6	6
EBS 41	0.36	1.12E-01	2,285,577	7.05E+05	860,868	3,710,286	44	24	24	24
EBS 42	2.21	4.33E-01	5,308,100	1.04E+06	3,183,499	7,432,701	31	31	31	31
EBS 43	0.28	1.12E-01	598,524	2.36E+05	107,683	1,089,364	22	12	12	12
EBS 82	0.02	1.67E-02	29,978	3.00E+04	0	95,959	12	1	1	1
Subtotal	1.68	1.64E-01	38,597,486	3.76E+06	31,082,259	46,112,713	186	142	142	142
EBS 50	0.40	7.04E-02	1,569,487	2.73E+05	1,006,820	2,132,154	26	23	23	23
EBS 61	0.59	1.06E-01	5,243,043	9.32E+05	3,359,426	7,126,660	60	41	41	41
EBS 62	0.41	1.07E-01	264,265	6.90E+04	86,792	441,739	7	6	6	6
EBS 90	0.05	4.82E-02	55,768	5.58E+04	0	192,232	8	1	1	1
Subtotal	0.49	6.73E-02	7,132,563	9.75E+05	5,182,029	9,083,097	101	71	71	71
Total EBS	2.18	2.07E-01	107,443,080	1.02E+07	87,282,397	127,603,762	376	292	292	292
NBS 70	0.82	2.25E-01	6,482,404	1.78E+06	2,876,729	10,088,079	58	25	25	25
NBS 71	0.08	2.61E-02	649,269	2.16E+05	212,980	1,085,559	56	10	10	10
NBS 81	0.04	1.79E-02	156,438	6.85E+04	15,923	296,953	28	5	5	5
Total NBS	0.36	8.98E-02	7,288,112	1.80E+06	3,691,268	10,884,956	142	40	40	40

*Differences in sums of estimates and totals are due to rounding.

Biomass, Abundance, Distribution and CPUE of Other Fish Taxa

Total biomass and population size were estimated for an additional 24 fish species that were common in either the EBS and NBS or both (Tables 20 to 21). For each of the 24 species, there is a corresponding map showing the geographic distribution and relative abundance (Figs. 31 to 55).

Spatial Distribution of Selected Invertebrates

Plots of the broad spatial distribution patterns for five major invertebrates on the combined EBS and NBS continental shelf are presented in Figures 56 to 60. The purple sea star, (*Asterias amurensis*), is common in the Bering and Chukchi Seas (Hamizaki et al. 2005, Feder et al. 2005) and it was the invertebrate taxon with the highest ranked catch rate by weight in both the EBS (Appendix C1) and NBS (Appendix C2). Catch rates for the purple sea star were highest in the middle shelf between the Pribilof Islands and Nunivak Island and along the inner shelf from Bristol Bay to the Bering Strait (Fig. 56).

Figures 57 to 60 show the shelf-wide distributions of the four major commercial crab species: red king crab, blue king crab, snow crab (*Chionoecetes opilio*), and Tanner crab (*Chionoecetes bairdi*). Commercial crab stocks are managed by the ADF&G with federal oversight by NMFS. For more detailed information on BT survey results for commercial crab refer to Chilton et al. (2011), and for the most recent modeling data on the status of these commercial crab stocks, refer to the annual Stock Assessment and Fishery Evaluation report prepared by the NPFMC.

Table 20. -- Mean CPUE (kg/ha), estimated biomass (t), standard error, and 95% confidence limits for other common groundfish species for the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) shelf bottom trawl surveys.

Species	Shelf area	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
Bering skate	EBS	0.24	3.41E-02	11,992	1.68E+03	8,665	15,319	376	73	73	72
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
Alaska skate	EBS	7.43	4.60E-01	366,116	2.27E+04	321,261	410,970	376	348	348	346
	NBS	3.84	2.88E-01	76,934	5.77E+03	65,399	88,470	142	84	84	0
longhead dab	EBS	0.23	1.08E-01	11,494	5.35E+03	798	22,190	376	33	33	32
	NBS	0.06	1.55E-02	1,207	3.11E+02	586	1,828	142	48	48	0
Sakhalin sole	EBS	0.00	6.92E-04	72	3.41E+01	5	140	376	14	14	13
	NBS	0.11	7.50E-03	2,109	1.50E+02	1,809	2,410	142	87	87	0
starry flounder	EBS	1.62	4.04E-01	79,913	1.99E+04	40,071	119,755	376	57	57	57
	NBS	0.80	5.96E-02	15,961	1.19E+03	13,575	18,347	142	51	51	0
sturgeon poacher	EBS	0.37	0.00E+00	18,240	0.00E+00	13,446	23,034	376	224	224	0
	NBS	0.01	1.57E-03	222	3.15E+01	159	286	142	21	21	0
antlered sculpin	EBS	0.00	0.00E+00	0	0.00E+00	0	0	376	0	0	0
	NBS	0.27	7.30E-02	5,431	1.46E+03	2,477	8,386	142	33	33	0
Arctic staghorn sculpin	EBS	0.00	0.00E+00	0	0.00E+00	0	0	376	0	0	0
	NBS	0.12	1.16E-02	2,441	2.33E+02	1,975	2,906	142	45	45	0
yellow Irish lord	EBS	0.43	1.97E-01	21,401	9.69E+03	1,620	41,182	376	40	40	40
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
butterfly sculpin	EBS	0.02	3.69E-03	939	1.82E+02	567	1,310	376	75	75	45
	NBS	0.07	3.39E-03	1,335	6.78E+01	1,198	1,472	142	71	71	0
bigmouth sculpin	EBS	0.66	8.37E-02	32,477	4.13E+03	24,308	40,645	376	91	91	89
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
plain sculpin	EBS	1.11	1.38E-01	54,835	6.83E+03	41,182	68,487	376	116	116	116
	NBS	1.41	8.61E-02	28,292	1.72E+03	24,845	31,739	142	81	81	0
great sculpin	EBS	1.01	1.41E-01	49,628	6.93E+03	35,911	63,346	376	159	159	158
	NBS	0.01	2.00E-03	292	4.01E+01	212	372	142	11	11	0

Table 20. -- Continued.

Species	Shelf area	Mean CPUE (kg/ha)	Stand. error CPUE (kg/ha)	Estimated biomass (t)*	Stand. error of estimated biomass	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
warty sculpin	EBS	0.14	3.75E-02	6,960	1.85E+03	3,296	10,623	376	55	55	55
	NBS	1.99	2.69E-01	39,765	5.39E+03	28,863	50,667	142	74	74	0
Arctic cod	EBS	0.47	2.22E-01	22,927	1.09E+04	412	45,443	376	153	153	153
	NBS	1.89	1.51E-01	37,861	3.03E+03	31,733	43,990	142	128	128	0
saffron cod	EBS	0.00	1.62E-03	108	7.99E+01	0	267	376	4	4	4
	NBS	4.54	6.19E-01	90,839	1.24E+04	66,066	115,612	142	56	56	0
variegated snailfish	EBS	0.05	1.14E-02	2,609	5.61E+02	1,497	3,721	376	66	66	0
	NBS	0.15	9.56E-03	2,972	1.91E+02	2,589	3,355	142	67	67	0
Pacific herring	EBS	0.69	5.25E-01	34,033	2.59E+04	0	86,840	376	47	47	0
	NBS	1.15	1.81E-01	22,987	3.62E+03	15,677	30,297	142	66	66	0
capelin	EBS	0.11	2.81E-02	5,316	1.38E+03	2,575	8,057	376	158	158	0
	NBS	0.73	5.13E-02	14,628	1.03E+03	12,594	16,663	142	92	92	0
rainbow smelt	EBS	0.00	2.86E-05	1	1.41E+00	0	4	376	1	1	0
	NBS	0.09	1.17E-02	1,861	2.35E+02	1,392	2,331	142	26	26	0
eulachon	EBS	0.09	2.61E-02	4,599	1.29E+03	2,022	7,176	376	35	35	0
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
shortfin eelpout	EBS	0.43	9.70E-02	20,976	4.78E+03	11,414	30,538	376	86	86	80
	NBS	0.00	2.68E-05	3	5.37E-01	2	4	142	1	1	0
wattled eelpout	EBS	0.13	1.67E-02	6,628	8.23E+02	4,999	8,257	376	132	132	127
	NBS	0.05	4.75E-03	928	9.51E+01	735	1,120	142	31	31	0
marbled eelpout	EBS	0.05	2.28E-02	2,656	1.12E+03	429	4,883	376	23	23	22
	NBS	0.46	1.66E-02	9,236	3.32E+02	8,558	9,913	142	44	44	0

Table 21. -- Mean CPUE (no./ha), estimated population number, standard error, and 95% confidence limits for other common groundfish species by stratum for the 2010 eastern Bering Sea (EBS) shelf and northern Bering Sea (NBS) shelf bottom trawl surveys.

Species	Shelf area	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
Bering skate	EBS	0.16	3.10E-02	7,789,527	1.53E+06	4,767,149	10,811,905	376	73	73	72
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
Alaska skate	EBS	2.08	1.03E-01	102,656,219	5.06E+06	92,628,870	112,683,568	376	348	348	346
	NBS	0.88	1.37E-01	17,668,801	2.75E+06	12,177,799	23,159,803	142	84	84	0
longhead dab	EBS	2.82	1.28E+00	139,194,794	6.30E+07	13,226,284	265,163,305	376	33	33	32
	NBS	1.06	6.23E-01	21,216,180	1.25E+07	0	46,162,264	142	48	48	0
Sakhalin sole	EBS	0.04	1.63E-02	1,912,997	8.05E+05	319,443	3,506,550	376	14	14	13
	NBS	4.51	9.61E-01	90,269,950	1.92E+07	51,786,342	128,753,558	142	87	87	0
starry flounder	EBS	1.24	3.11E-01	60,969,515	1.53E+07	30,275,305	91,663,726	376	57	57	57
	NBS	0.93	1.98E-01	18,717,814	3.96E+06	10,795,294	26,640,334	142	51	51	0
sturgeon poacher	EBS	6.51	0.00E+00	320,839,239	0.00E+00	244,915,467	396,763,011	376	224	224	0
	NBS	0.25	8.57E-02	5,018,688	1.72E+06	1,552,564	8,484,813	142	21	21	0
antlered sculpin	EBS	0.00	0.00E+00	0	0.00E+00	0	0	376	0	0	0
	NBS	3.04	1.44E+00	60,781,118	2.88E+07	2,526,251	119,035,984	142	33	33	0
Arctic staghorn sculpin	EBS	0.00	0.00E+00	0	0.00E+00	0	0	376	0	0	0
	NBS	4.07	1.52E+00	81,442,340	3.05E+07	20,443,829	142,440,852	142	45	45	0
yellow Irish lord	EBS	0.59	2.42E-01	29,159,022	1.19E+07	4,814,999	53,503,045	376	40	40	40
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
butterfly sculpin	EBS	0.22	4.13E-02	10,630,752	2.03E+06	6,477,761	14,783,744	376	75	75	45
	NBS	0.98	2.05E-01	19,655,781	4.11E+06	11,354,018	27,957,543	142	71	71	0
bigmouth sculpin	EBS	0.17	1.99E-02	8,178,932	9.82E+05	6,234,786	10,123,078	376	91	91	89
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
plain sculpin	EBS	1.96	2.87E-01	96,585,172	1.42E+07	68,268,501	124,901,843	376	116	116	116
	NBS	1.98	3.06E-01	39,556,092	6.12E+06	27,309,861	51,802,324	142	81	81	0
great sculpin	EBS	0.41	4.65E-02	20,201,517	2.29E+06	15,666,705	24,736,328	376	159	159	158
	NBS	0.08	3.92E-02	1,530,449	7.84E+05	0	3,098,763	142	11	11	0

Table 21. -- Continued.

Species	Shelf area	Mean CPUE (no./ha)	Stand. error CPUE (no./ha)	Estimated population numbers*	Stand. error of estimated population	95% Confidence limit Lower	95% Confidence limit Upper	Total hauls	Hauls with catch	Hauls with numbers	Hauls with length measurements
warty sculpin	EBS	0.14	3.36E-02	6,767,215	1.66E+06	3,488,710	10,045,720	376	55	55	55
	NBS	7.23	1.88E+00	144,838,397	3.76E+07	68,820,468	220,856,325	142	74	74	0
Arctic cod	EBS	39.74	1.49E+01	1,958,844,971	7.36E+08	442,112,478	3,475,577,463	376	153	153	153
	NBS	158.82	4.63E+01	3,179,760,273	9.27E+08	1,306,419,334	5,053,101,213	142	128	128	0
saffron cod	EBS	0.13	1.32E-01	6,642,541	6.53E+06	0	19,571,212	376	4	4	4
	NBS	55.92	1.62E+01	1,119,646,130	3.24E+08	471,973,680	1,767,318,579	142	56	56	0
variegated snailfish	EBS	0.22	4.29E-02	10,992,545	2.12E+06	6,803,604	15,181,485	376	66	66	0
	NBS	1.01	2.36E-01	20,290,938	4.72E+06	10,860,870	29,721,005	142	67	67	0
Pacific herring	EBS	4.17	3.27E+00	205,368,073	1.61E+08	0	534,923,654	376	47	47	0
	NBS	6.83	2.07E+00	136,722,714	4.14E+07	53,112,118	220,333,311	142	66	66	0
capelin	EBS	7.03	1.92E+00	346,718,144	9.49E+07	158,875,671	534,560,617	376	158	158	0
	NBS	61.94	2.18E+01	1,240,043,810	4.37E+08	375,261,659	2,104,825,960	142	92	92	0
rainbow smelt	EBS	0.00	6.51E-04	32,089	3.21E+04	0	95,627	376	1	1	0
	NBS	2.44	9.15E-01	48,943,692	1.83E+07	12,310,700	85,576,684	142	26	26	0
eulachon	EBS	3.08	1.00E+00	151,810,663	4.93E+07	53,194,427	250,426,898	376	35	35	0
	NBS	0.00	0.00E+00	0	0.00E+00	0	0	142	0	0	0
shortfin eelpout	EBS	6.08	1.17E+00	299,490,736	5.76E+07	184,379,518	414,601,954	376	86	86	80
	NBS	0.00	3.18E-03	63,716	6.37E+04	0	191,149	142	1	1	0
wattled eelpout	EBS	1.40	1.74E-01	69,076,569	8.55E+06	52,143,955	86,009,183	376	132	132	127
	NBS	1.02	5.36E-01	20,438,949	1.07E+07	0	42,145,689	142	31	31	0
marbled eelpout	EBS	0.19	7.37E-02	9,333,712	3.63E+06	2,140,383	16,527,041	376	23	23	22
	NBS	2.95	6.28E-01	59,070,932	1.26E+07	33,380,075	84,761,790	142	44	44	0

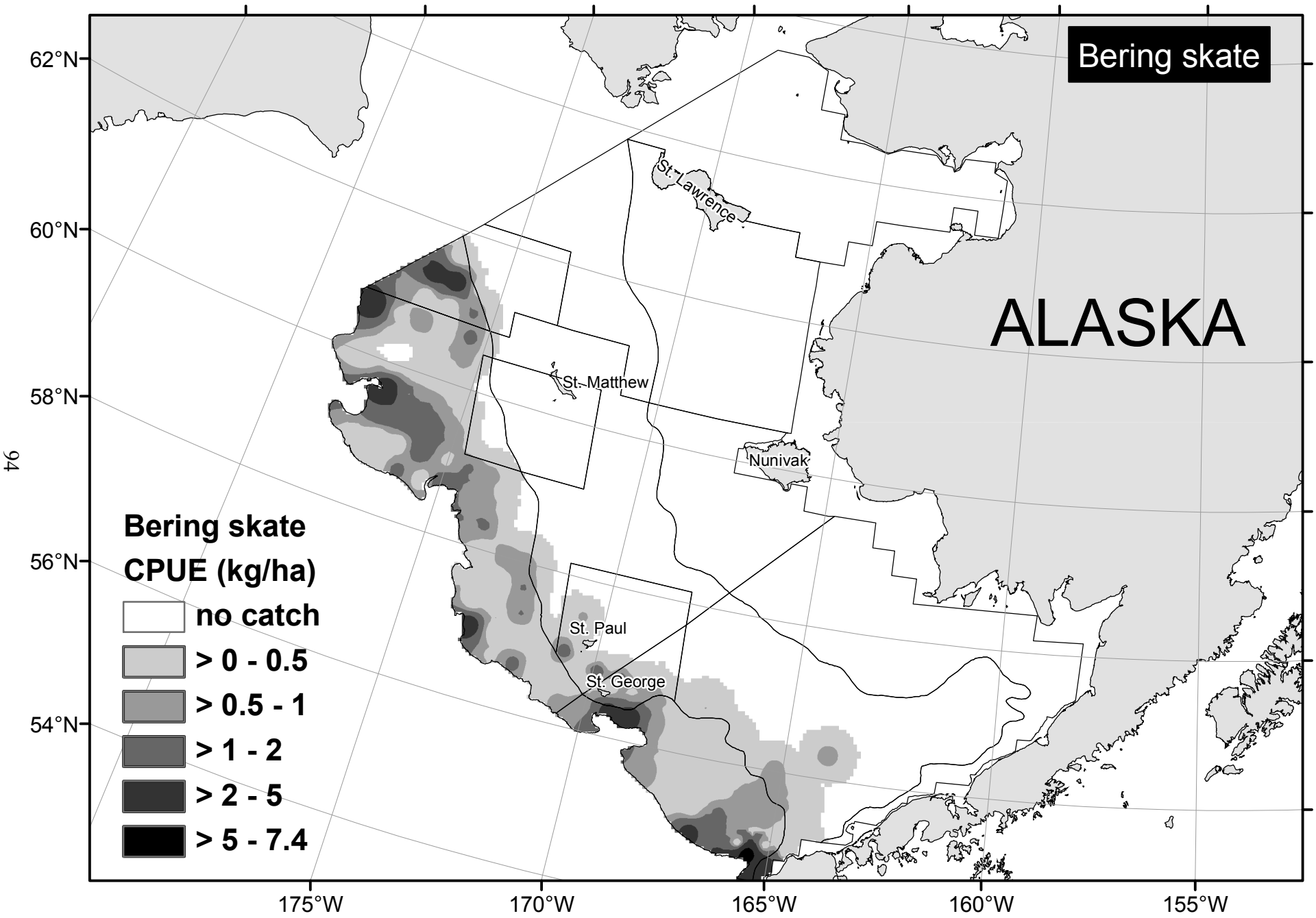

Figure 31. -- Distribution and relative abundance (kg/ha) of **Bering skate** (*Bathyraja interrupta*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

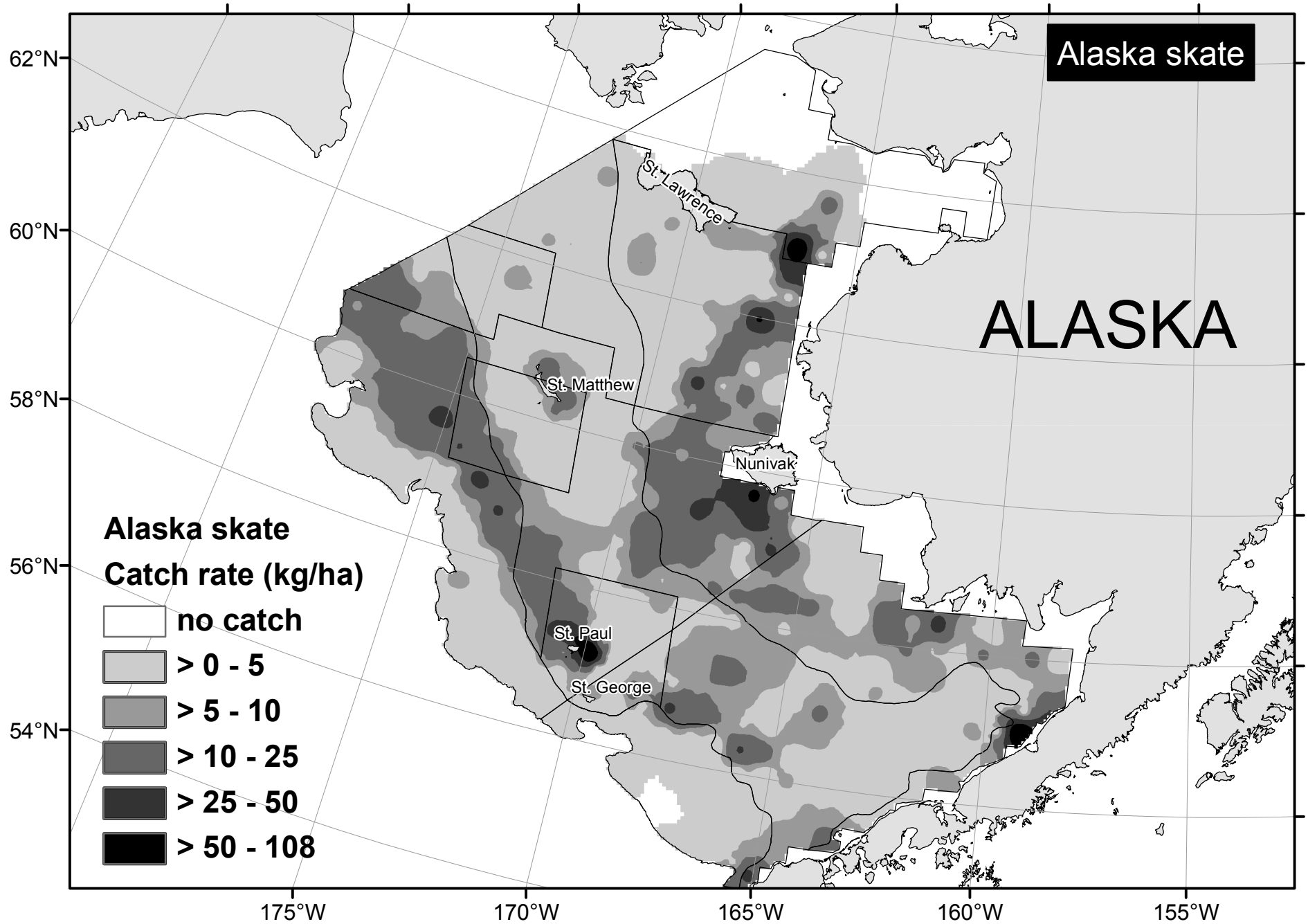

Figure 32. -- Distribution and relative abundance (kg/ha) of **Alaska skate** (*Bathyraja parmifera*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

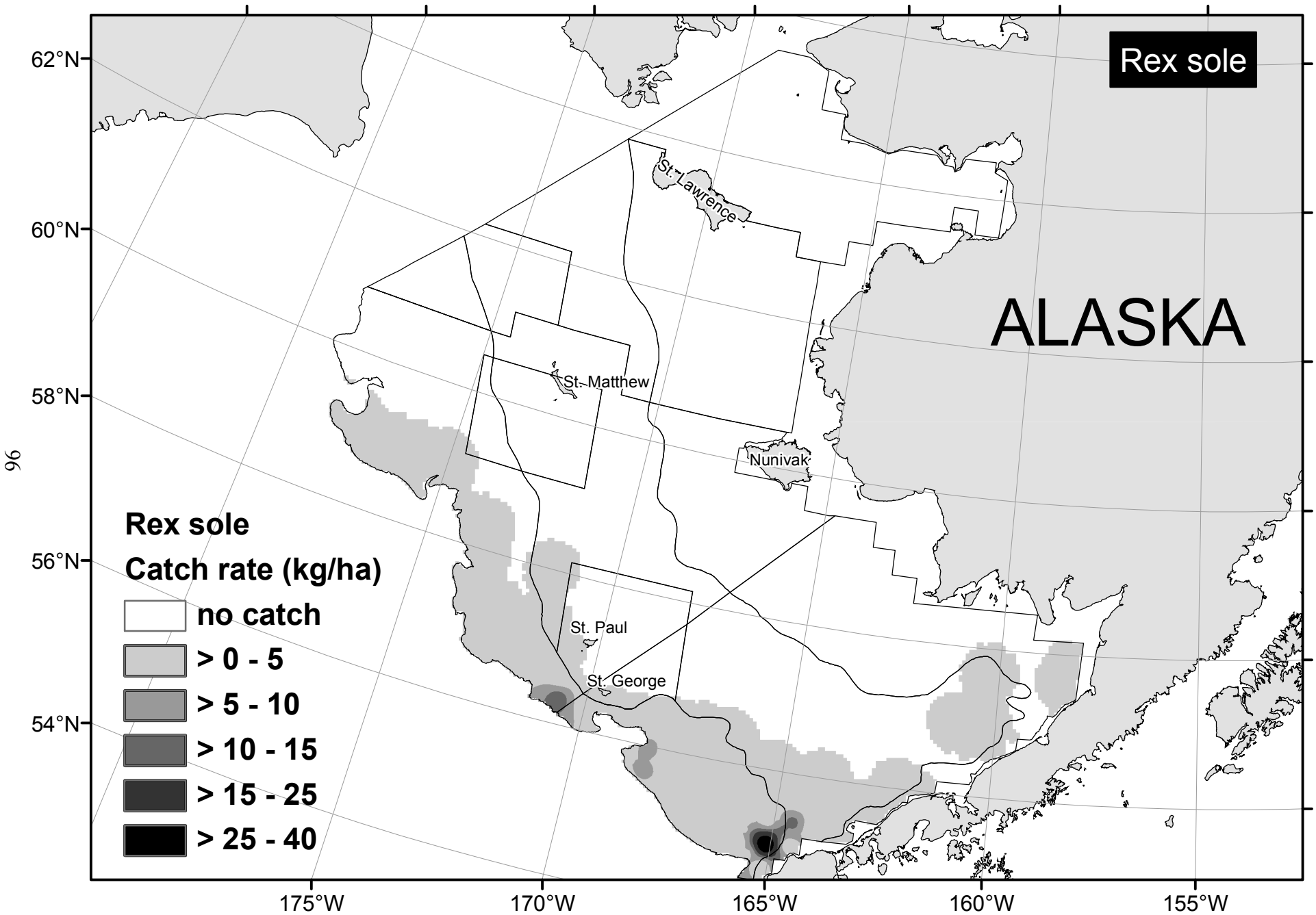

Figure 33. -- Distribution and relative abundance (kg/ha) of **rex sole** (*Glyptocephalus zachirus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

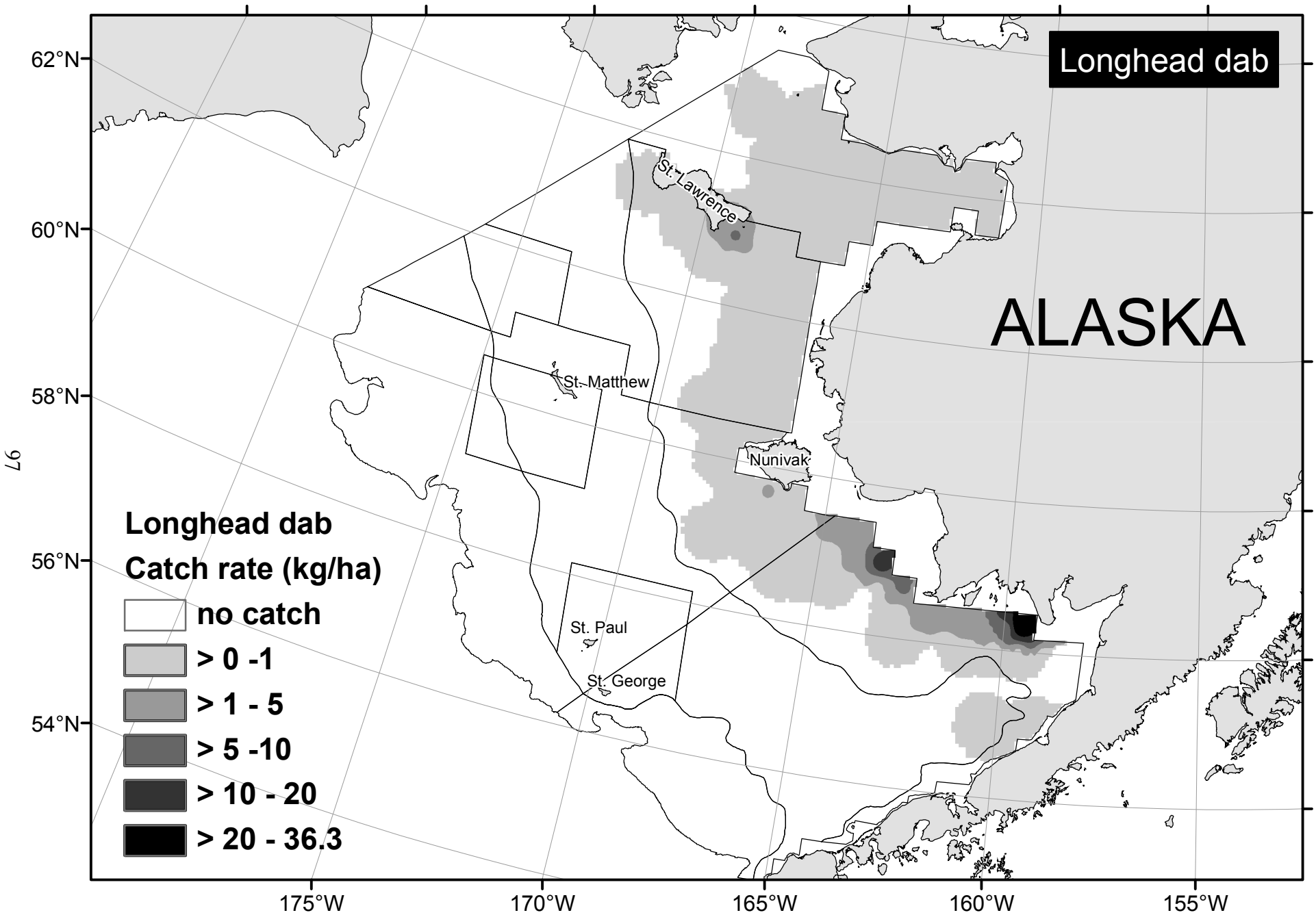

Figure 34. -- Distribution and relative abundance (kg/ha) of **longhead dab** (*Limanda proboscidea*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

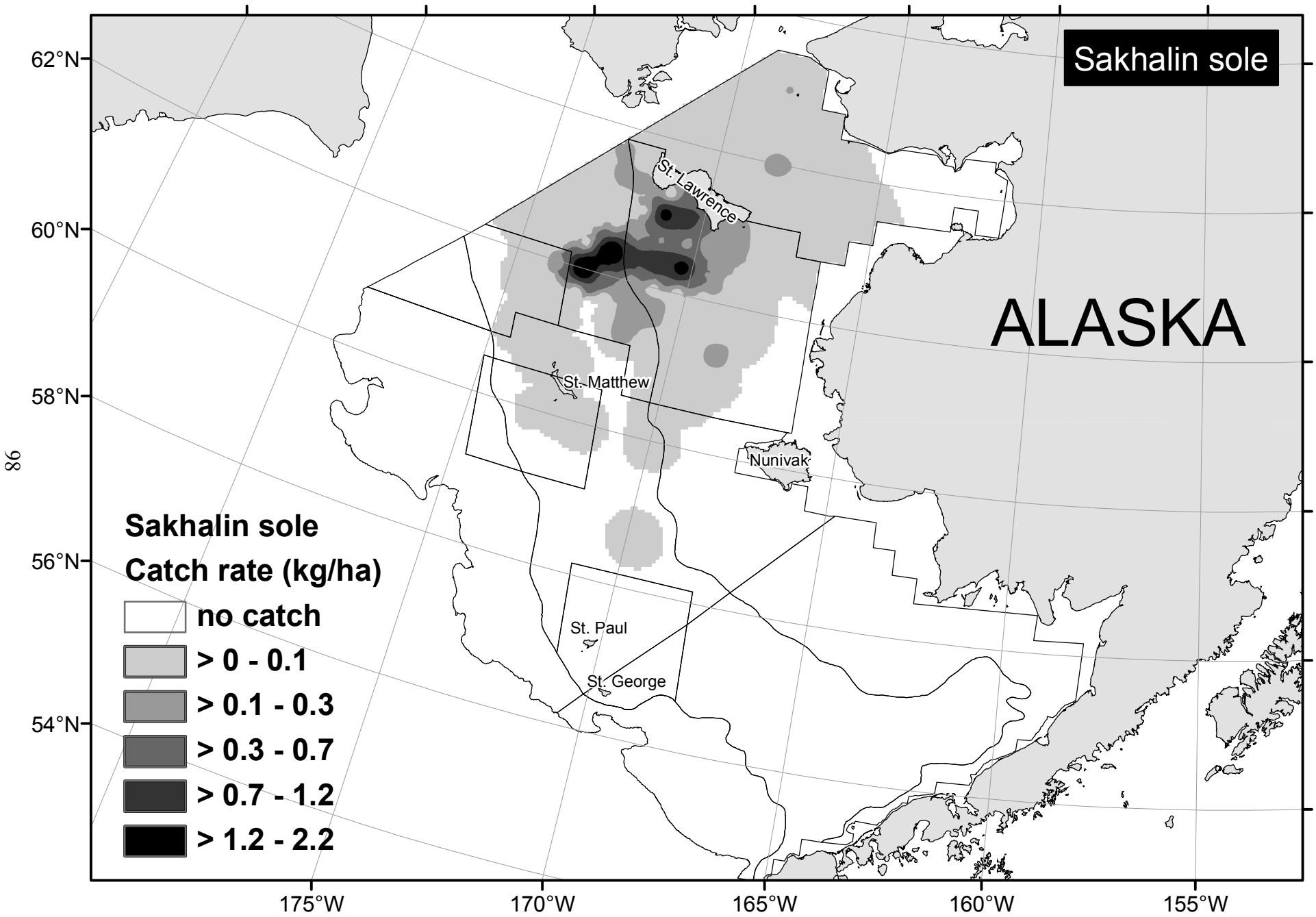

Figure 35. -- Distribution and relative abundance (kg/ha) of **Sakhalin sole** (*Limanda sakhalinensis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

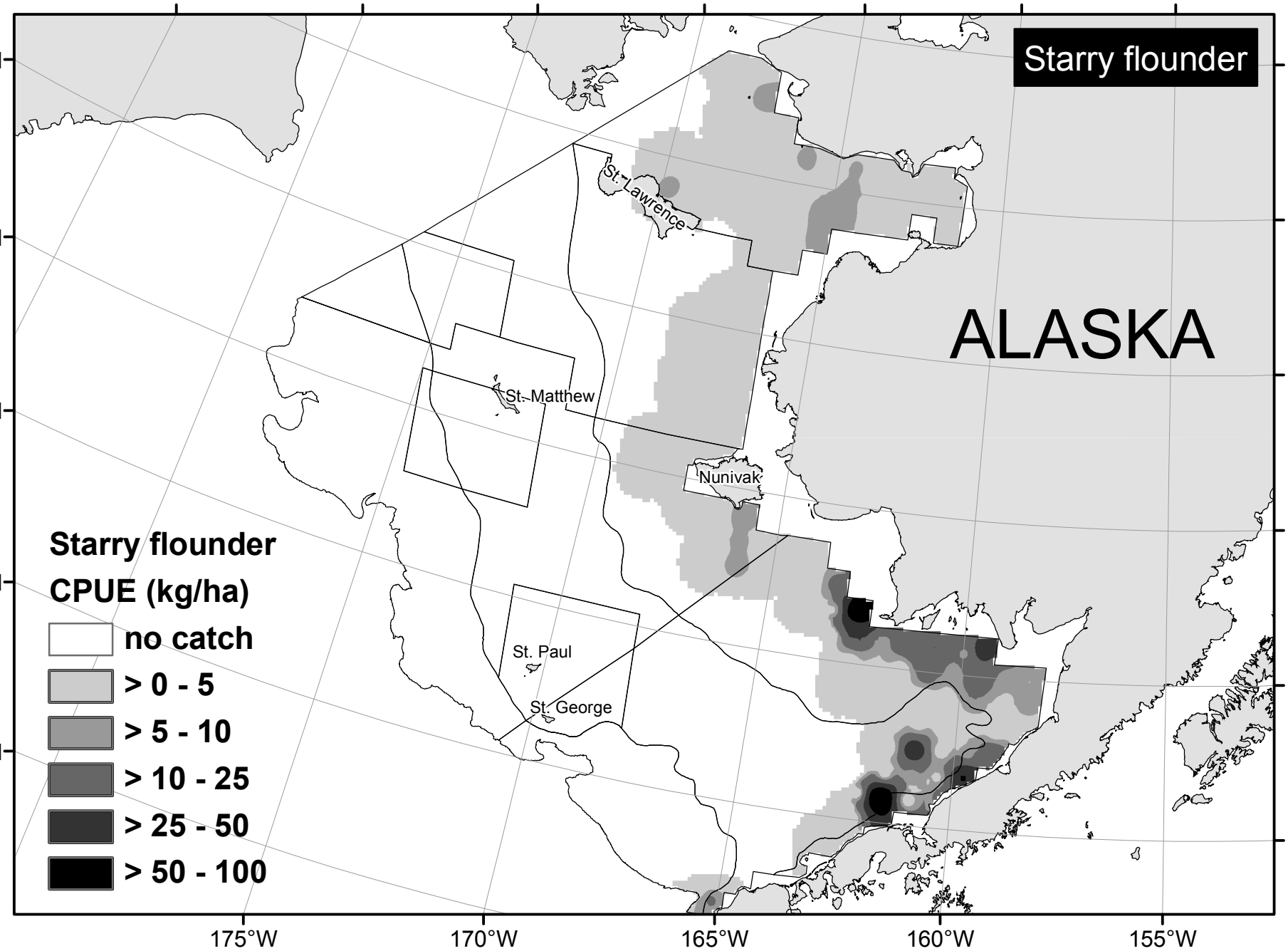

Figure 36. -- Distribution and relative abundance (kg/ha) of **starry flounder** (*Platichthys stellatus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

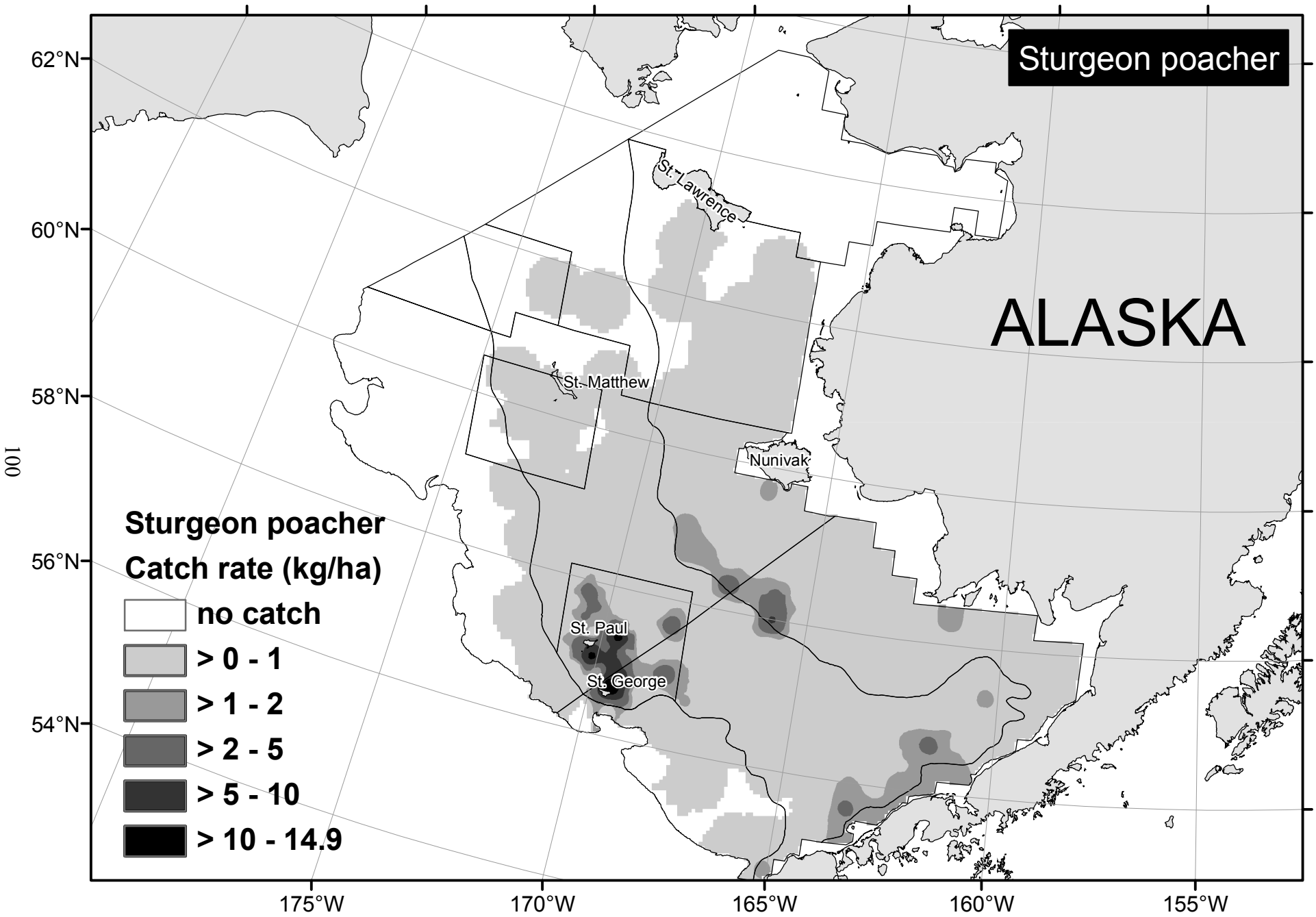

Figure 37. -- Distribution and relative abundance (kg/ha) of **sturgeon poacher** (*Podothecus accipenserinus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

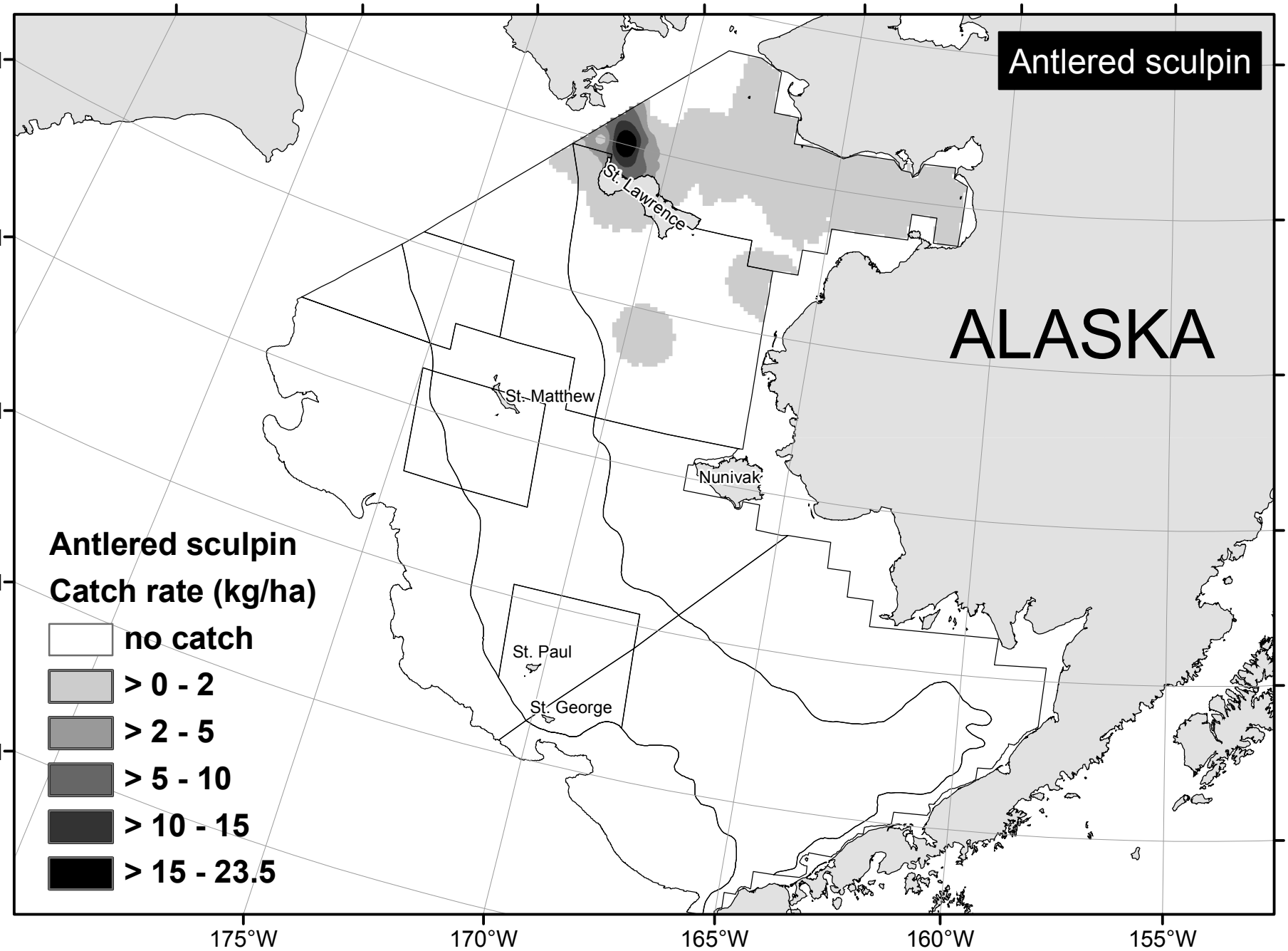

Figure 38. -- Distribution and relative abundance (kg/ha) of **Antlered sculpin** (*Enophrys diceraus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

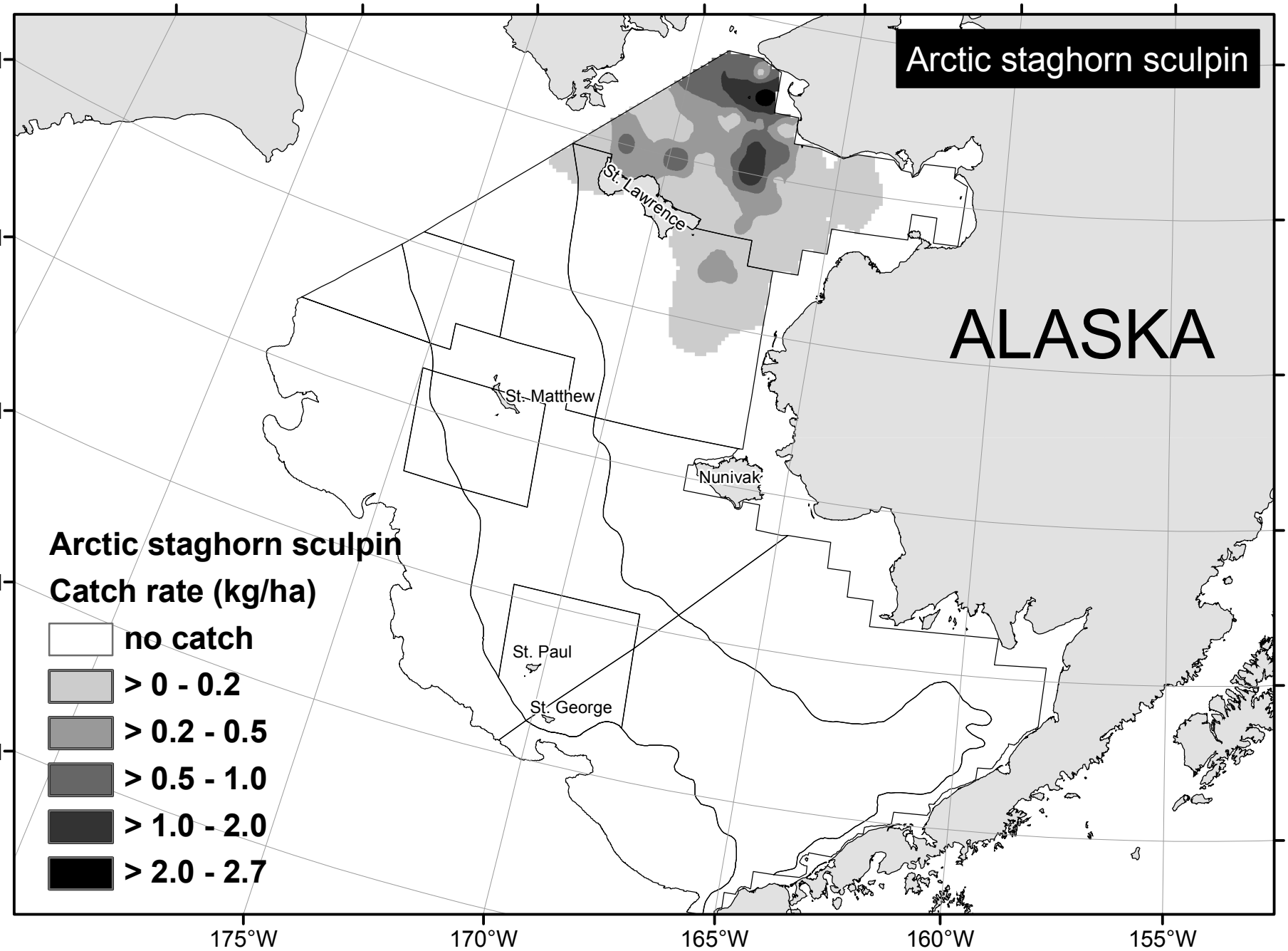

Figure 39. -- Distribution and relative abundance (kg/ha) of **Arctic staghorn sculpin** (*Gymnocanthus tricuspis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

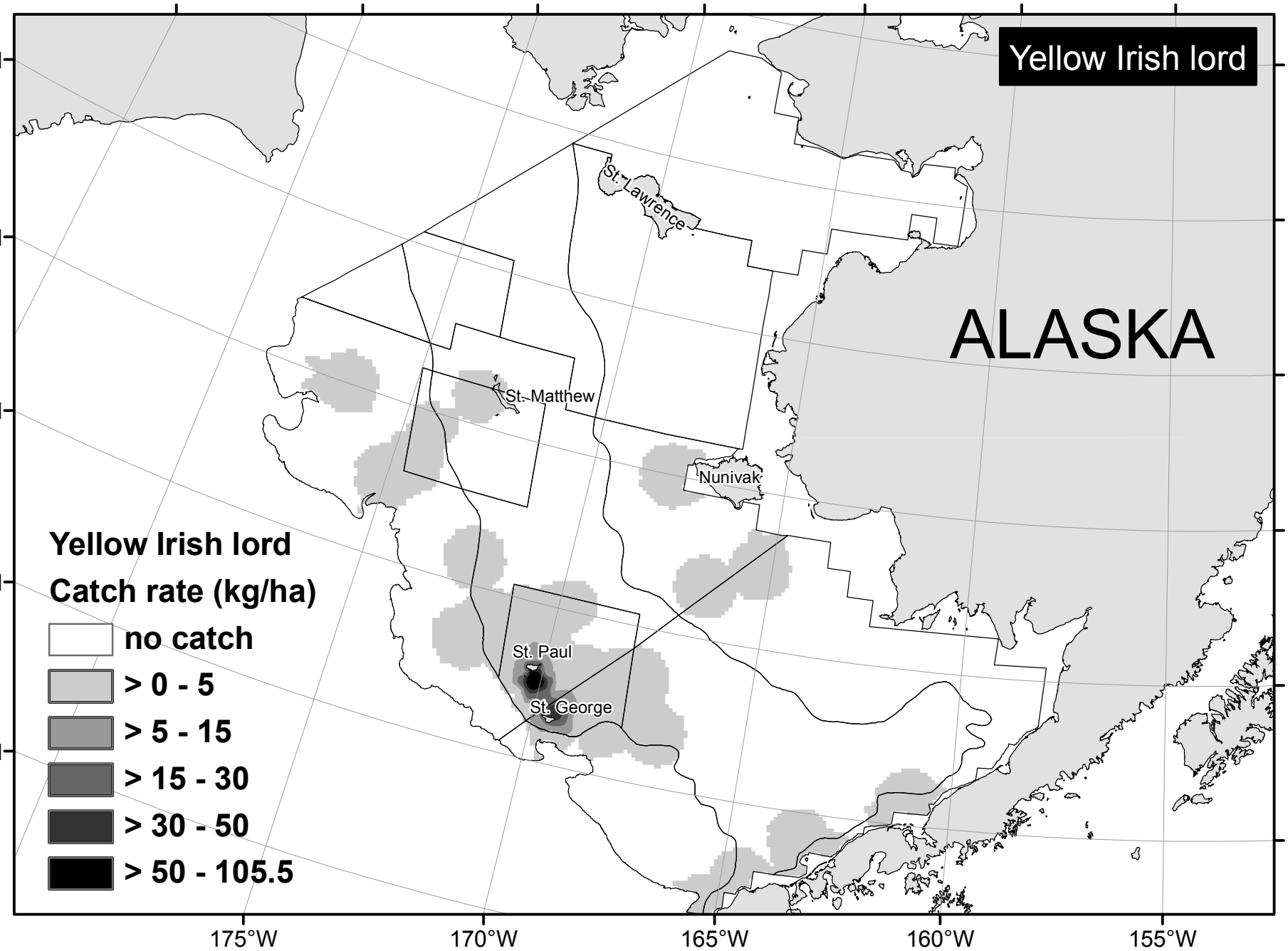

Figure 40. -- Distribution and relative abundance (kg/ha) of **yellow Irish lord** (*Hemilepidotus jordani*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

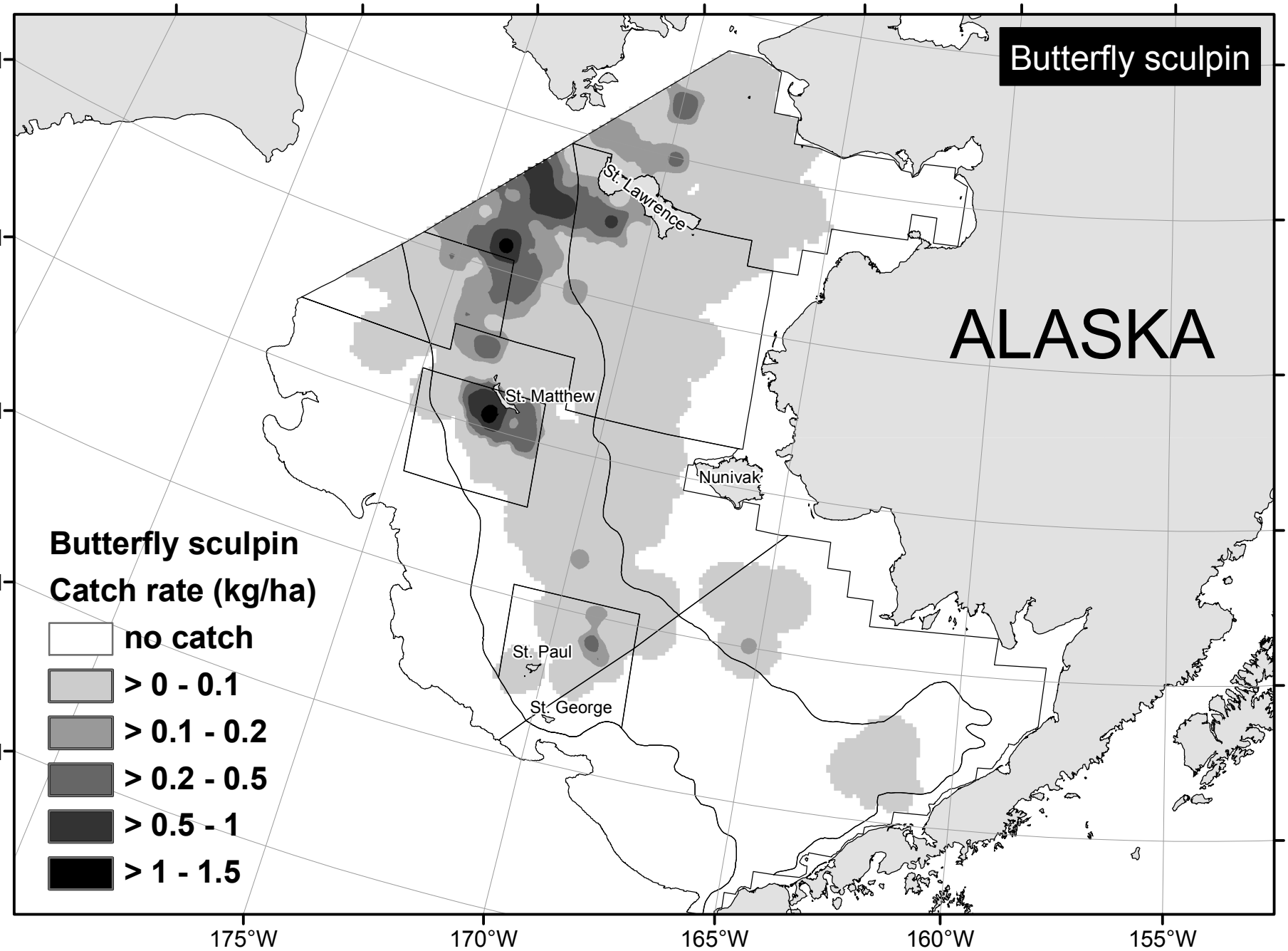

Figure 41. -- Distribution and relative abundance (kg/ha) of **butterfly sculpin** (*Hemilepidotus papilio*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

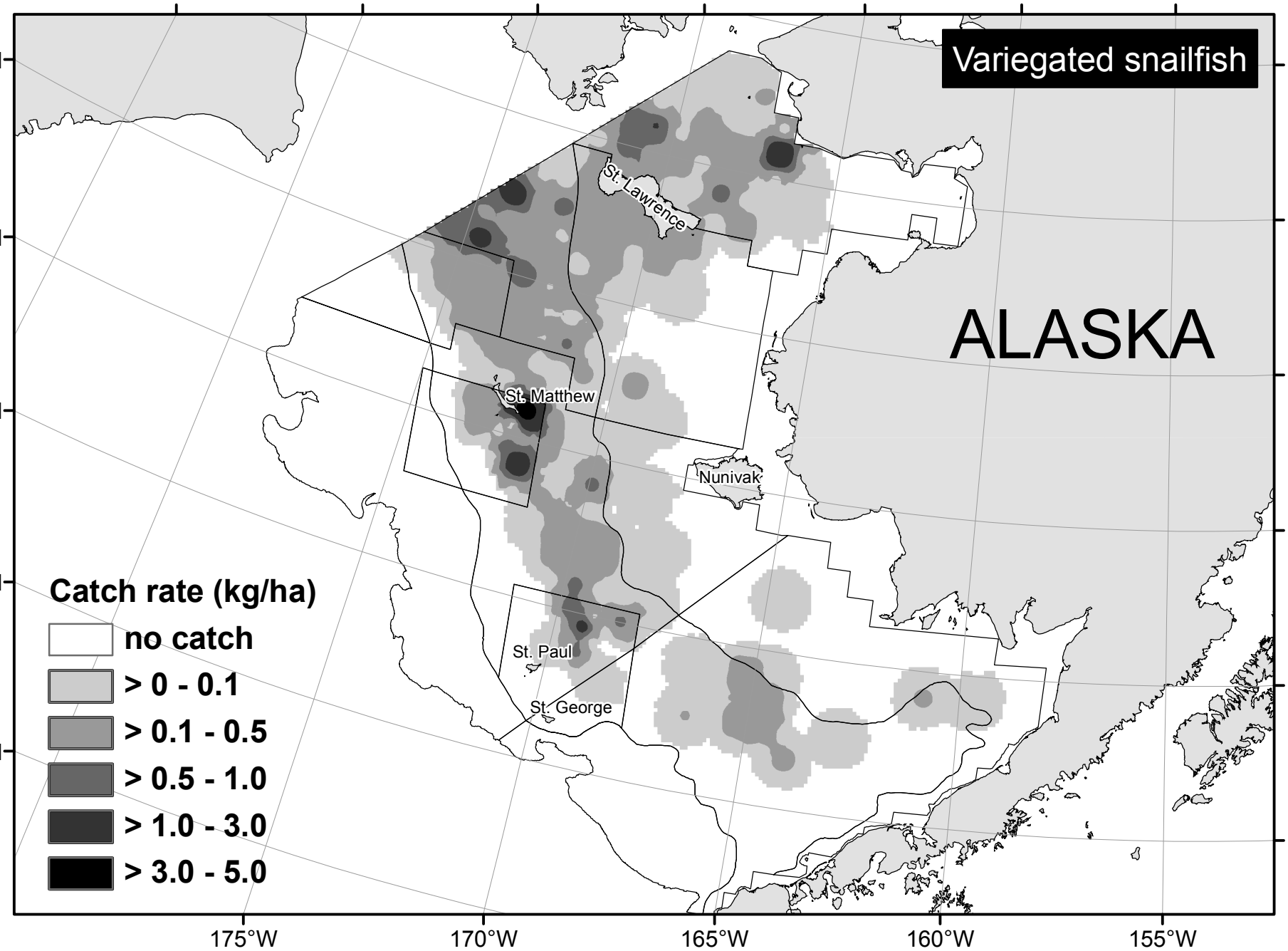

Figure 42. -- Distribution and relative abundance (kg/ha) of **variegated snailfish** (*Liparis gibbus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

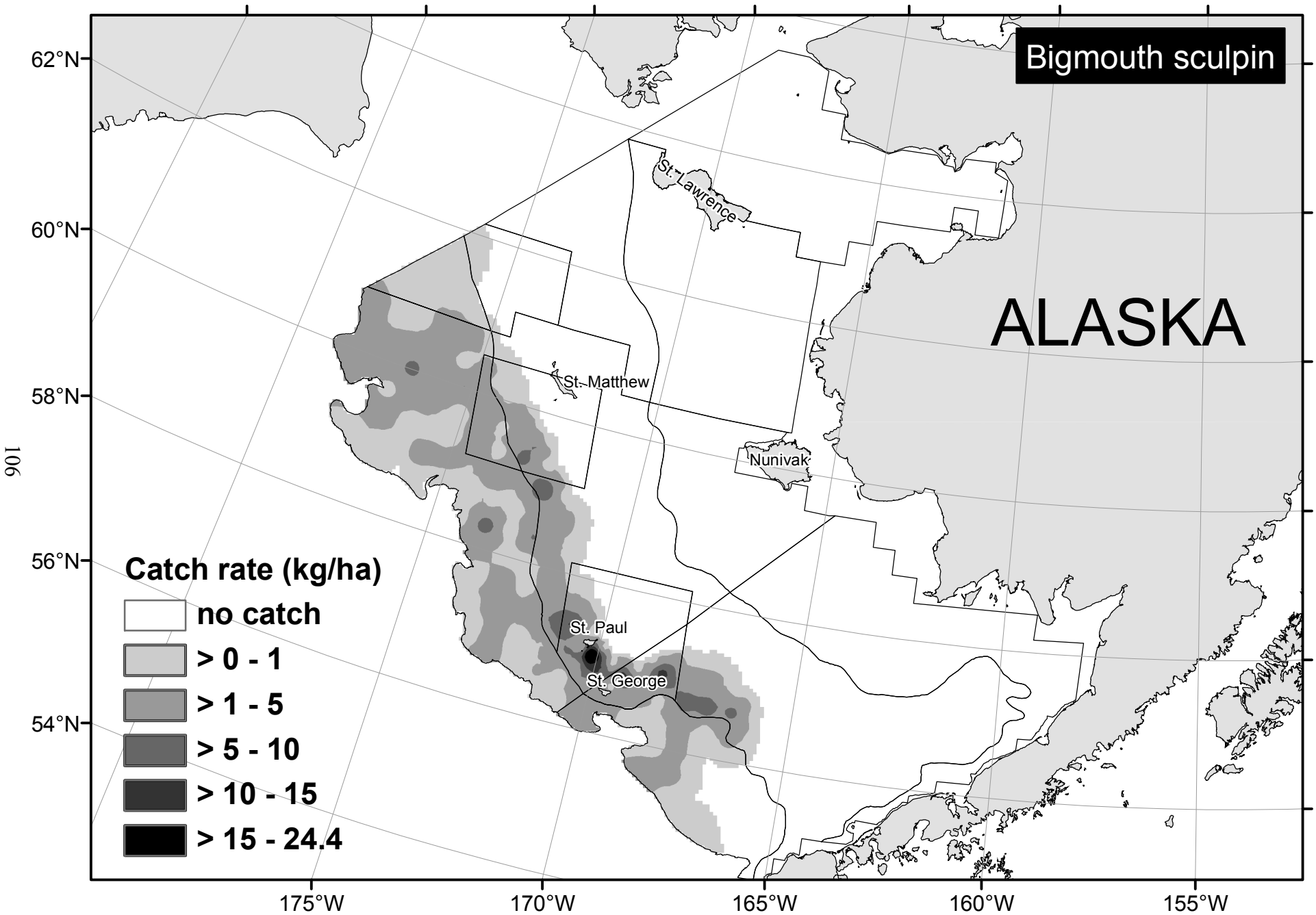

Figure 43. -- Distribution and relative abundance (kg/ha) of **bigmouth sculpin** (*Hemitripterus bolini*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

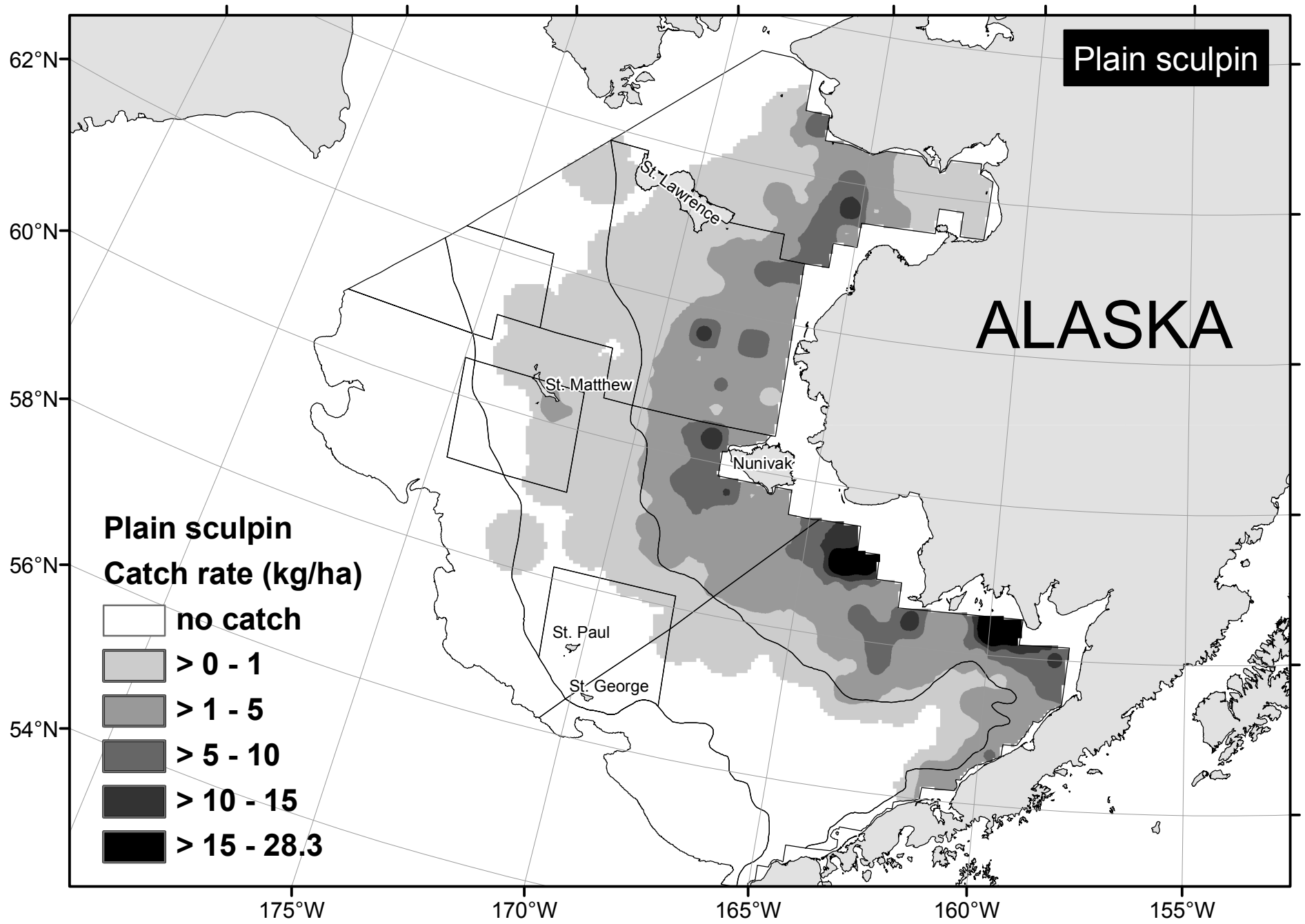

Figure 44. -- Distribution and relative abundance (kg/ha) of **plain sculpin** (*Myoxocephalus jaok*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

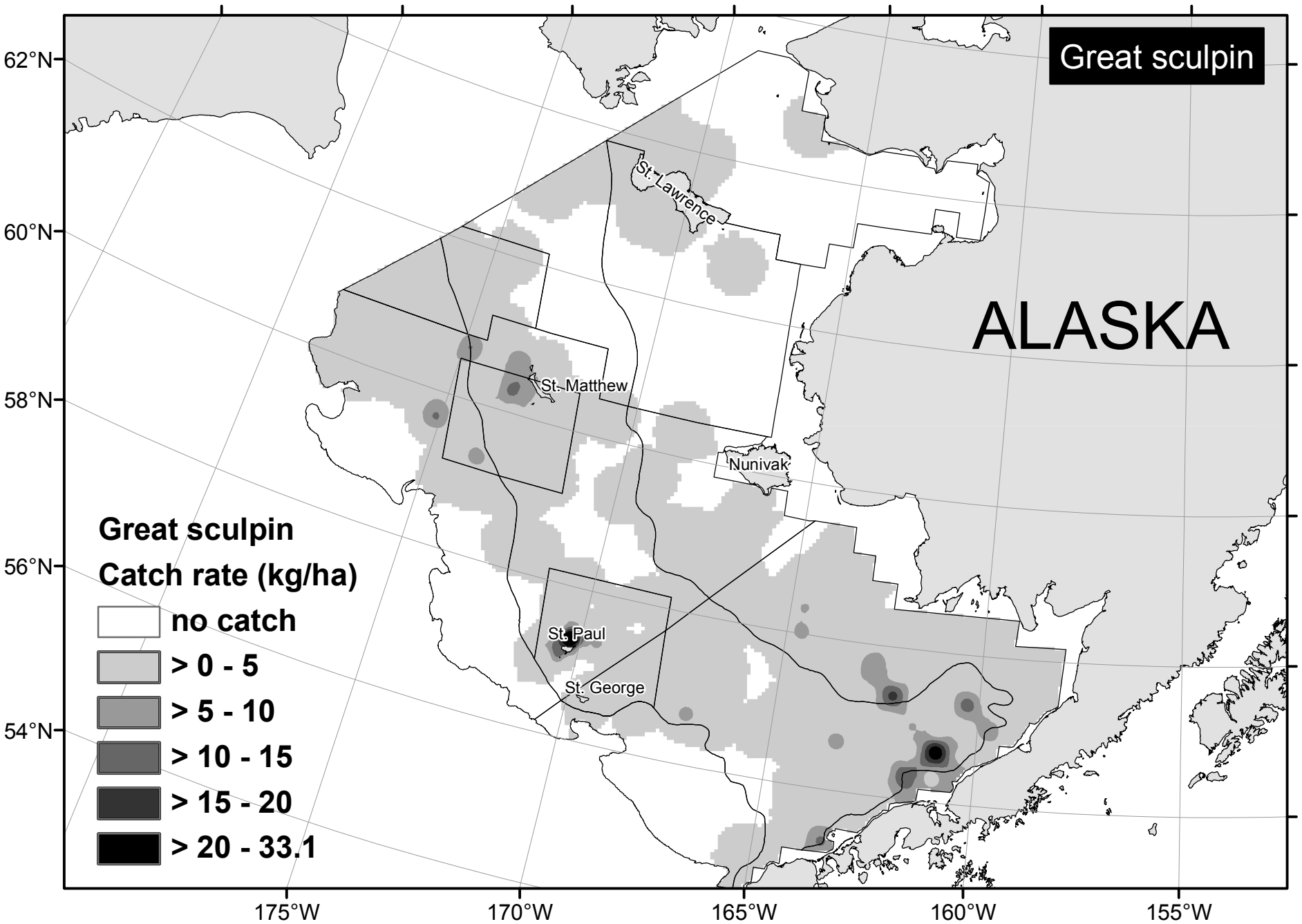

Figure 45. -- Distribution and relative abundance (kg/ha) of **great sculpin** (*Myoxocephalus polyacanthocephalus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

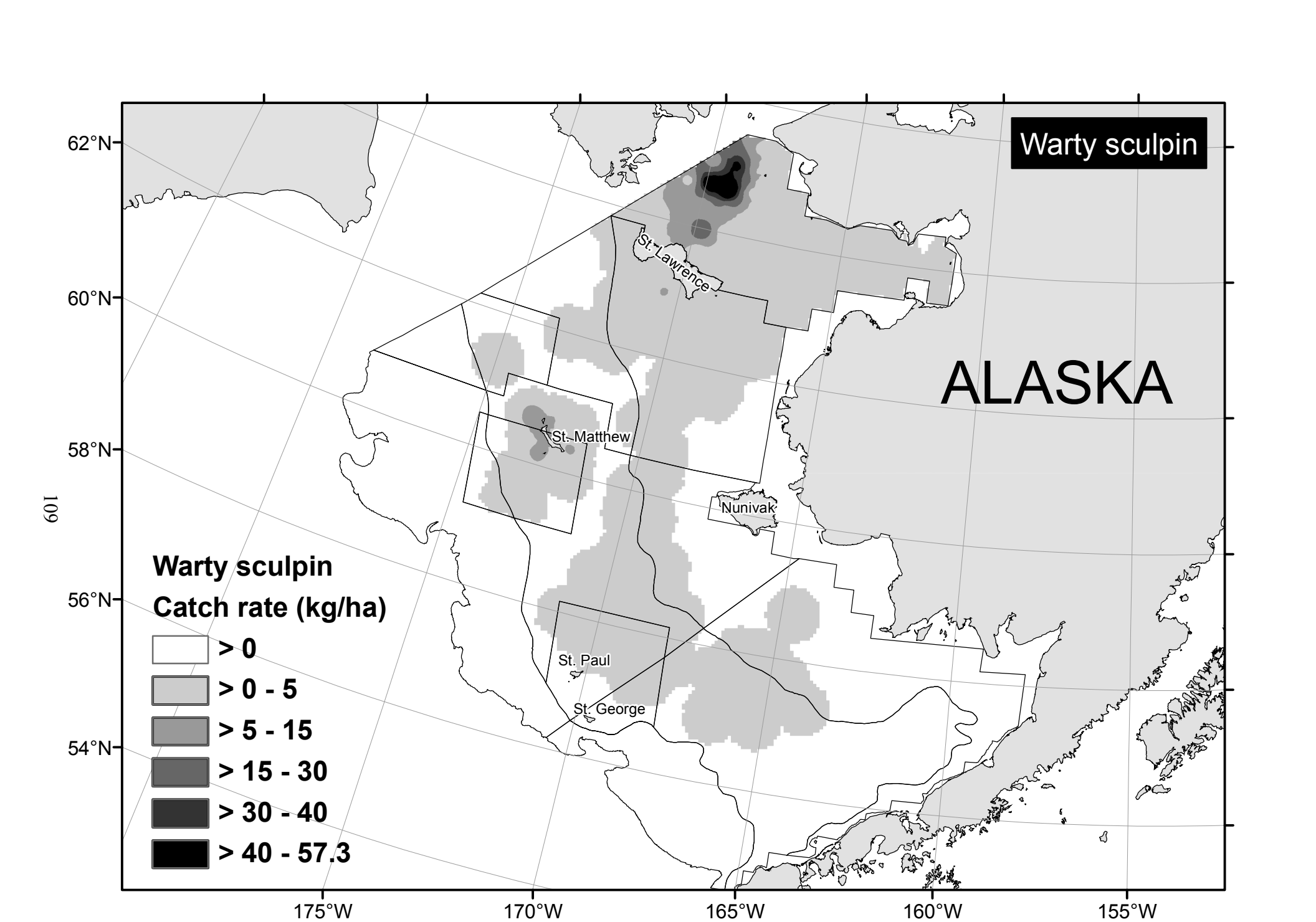

Figure 46. -- Distribution and relative abundance (kg/ha) of **warty sculpin** (*Myoxocephalus verrucosus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

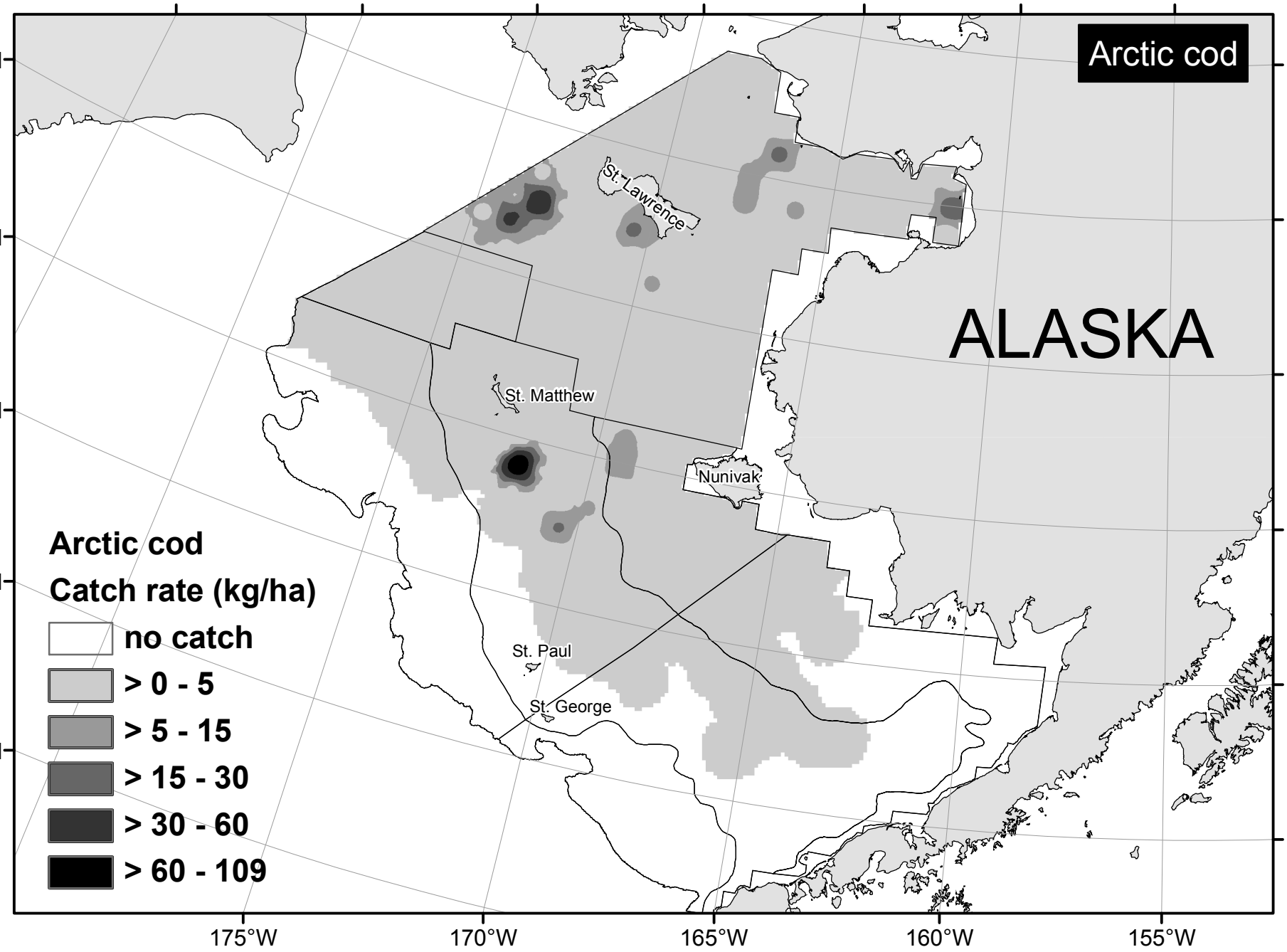

Figure 47. -- Distribution and relative abundance (kg/ha) of **Arctic cod** (*Boreogadus saida*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

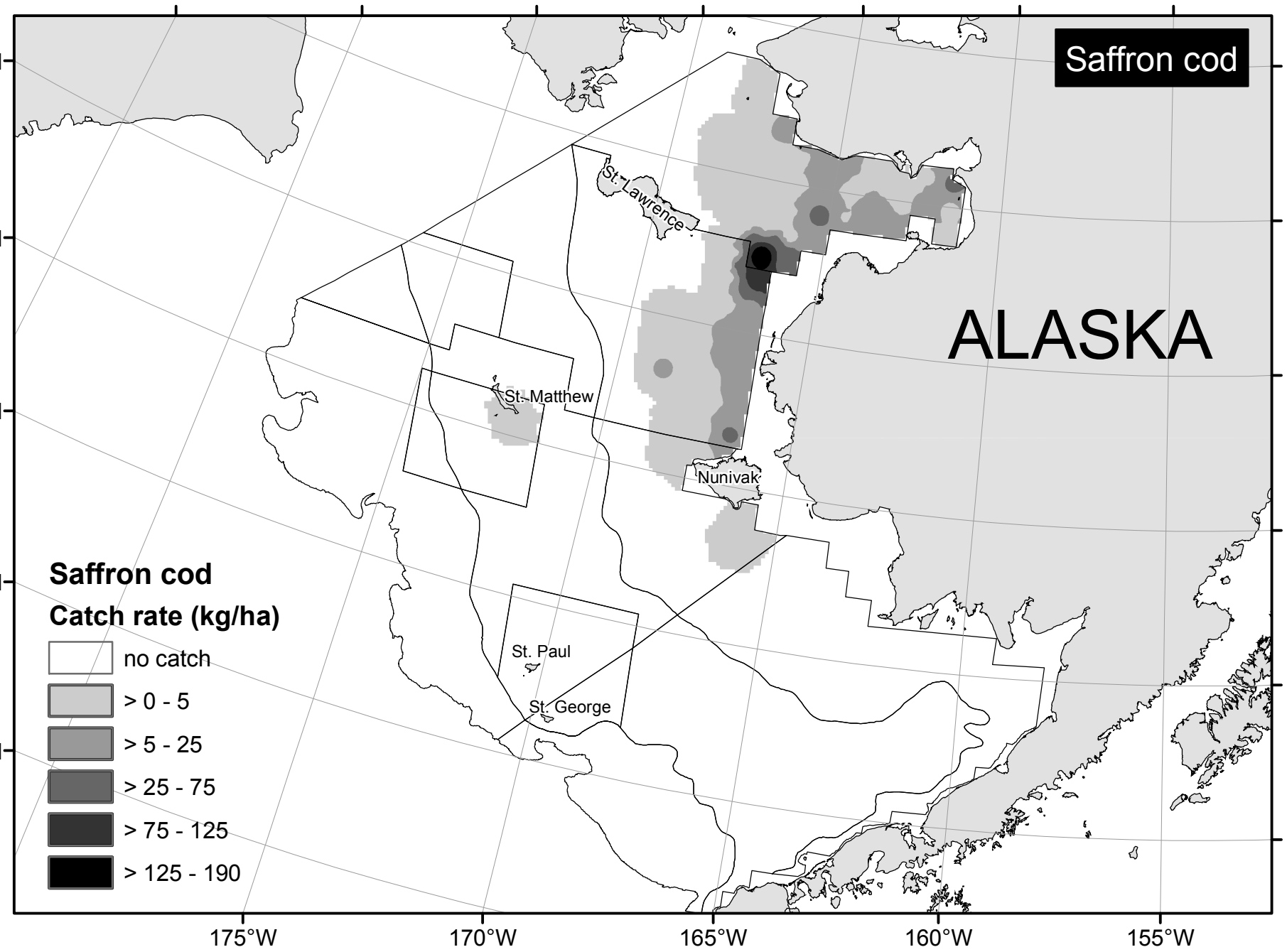

Figure 48. -- Distribution and relative abundance (kg/ha) of **saffron cod** (*Eleginus gracilis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

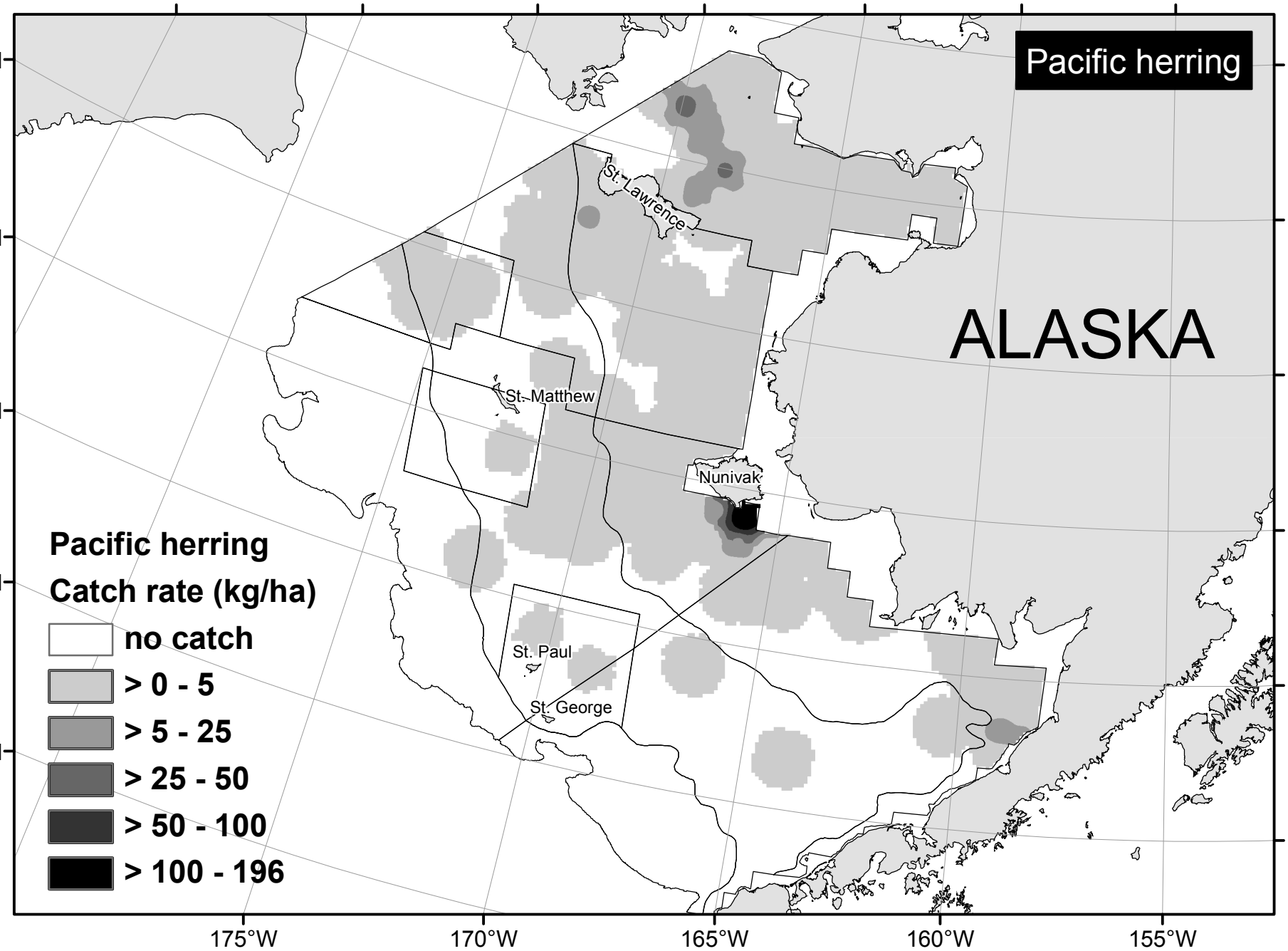

Figure 49. -- Distribution and relative abundance (kg/ha) of **Pacific herring** (*Clupea pallasi*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

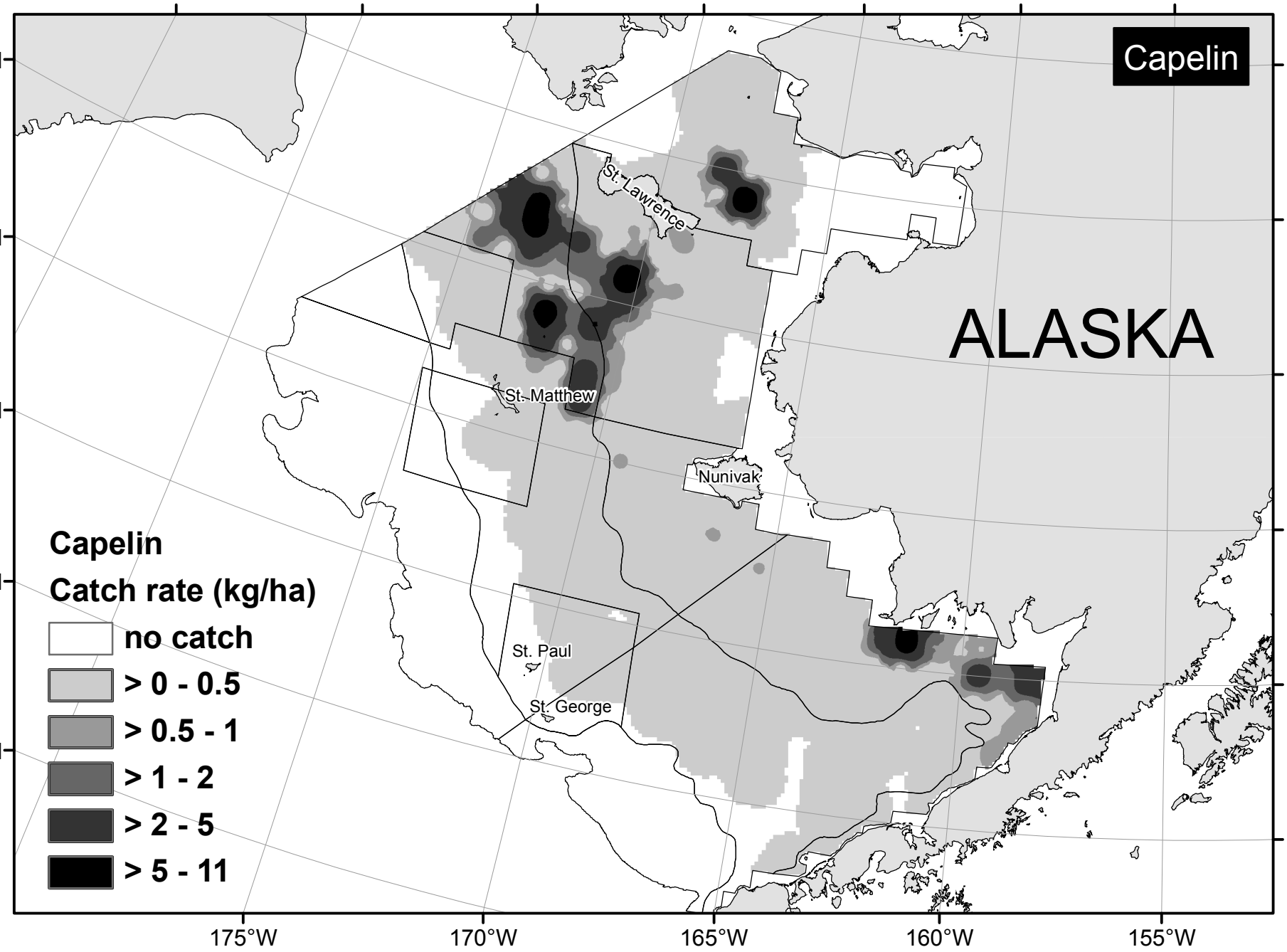

Figure 50. -- Distribution and relative abundance (kg/ha) of **capelin** (*Mallotus villosus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

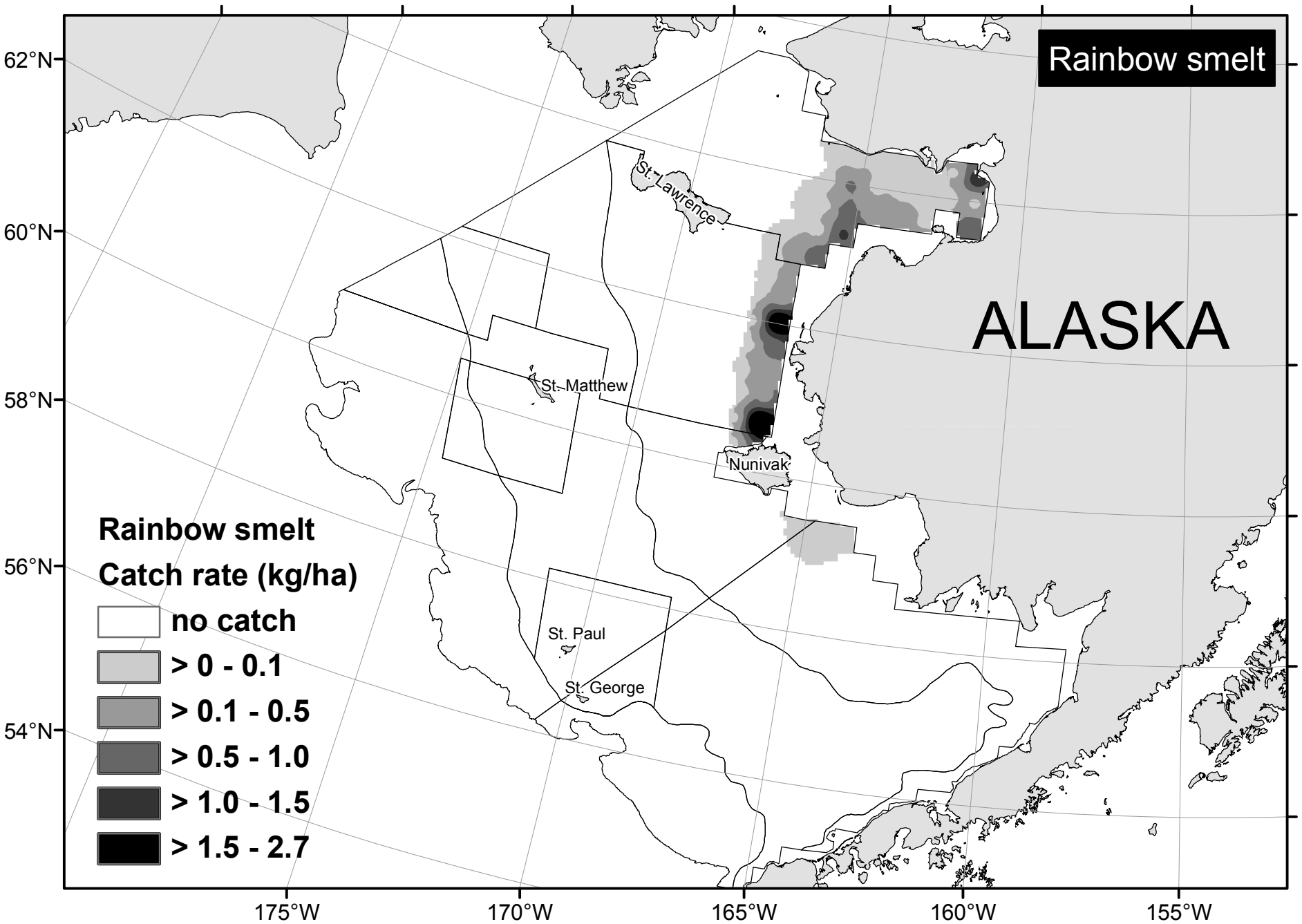

Figure 51. -- Distribution and relative abundance (kg/ha) of **rainbow smelt** (*Osmerus mordax*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

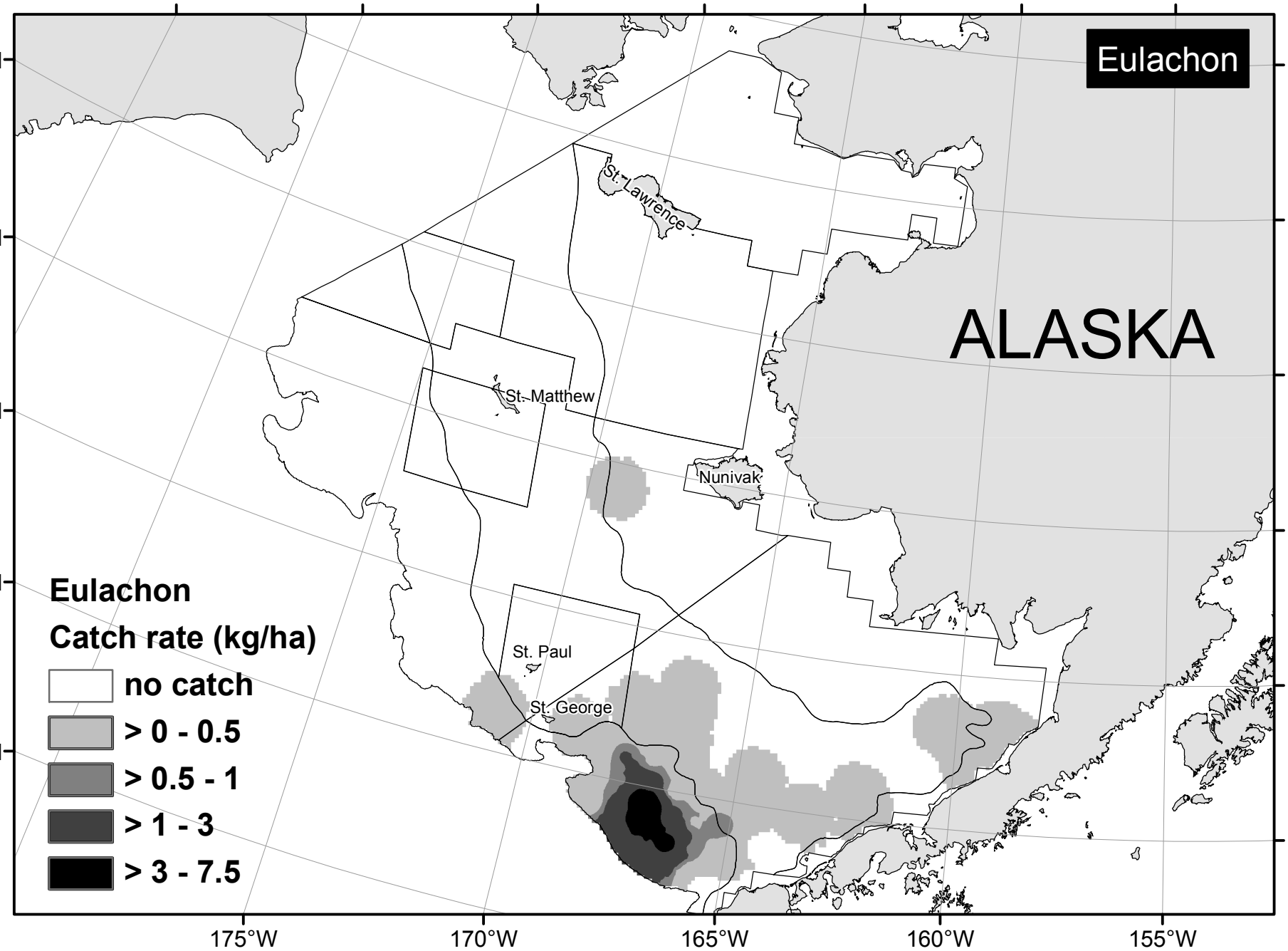

Figure 52. -- Distribution and relative abundance (kg/ha) of **eulachon** (*Thaleichthys pacificus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

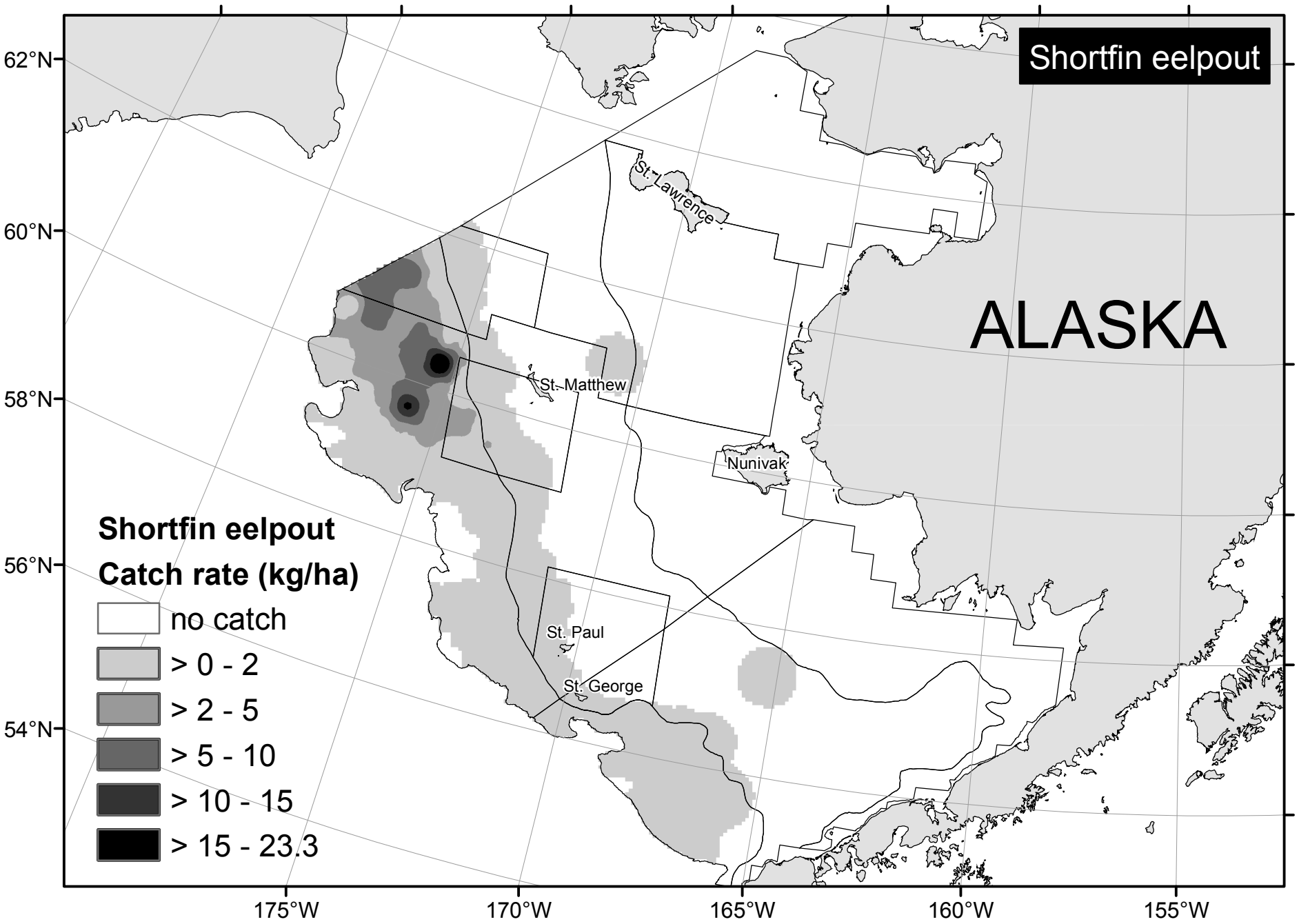

Figure 53. -- Distribution and relative abundance (kg/ha) of **shortfin eelpout** (*Lycodes brevipes*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

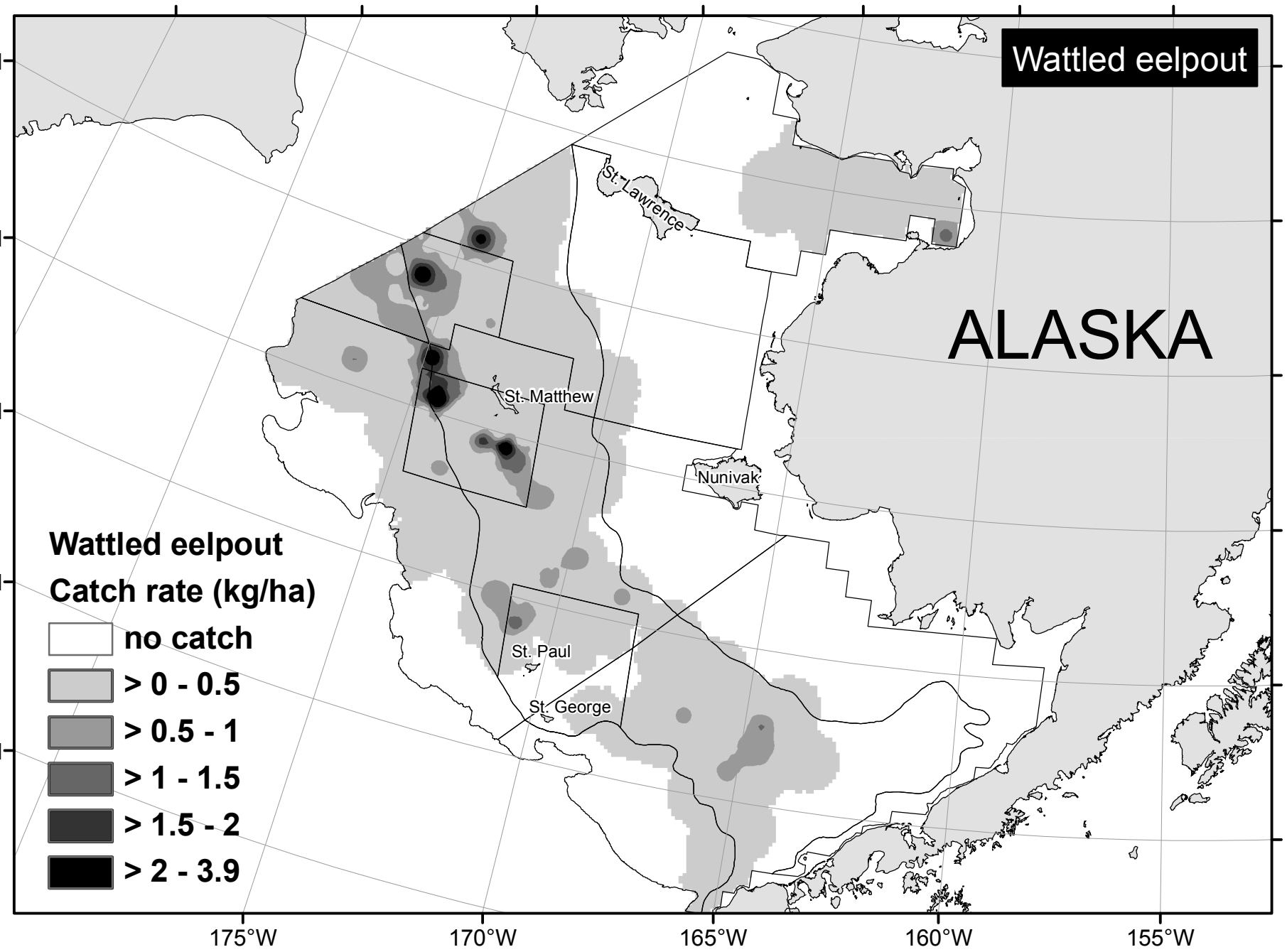

Figure 54. -- Distribution and relative abundance (kg/ha) of **wattled eelpout** (*Lycodes palearis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

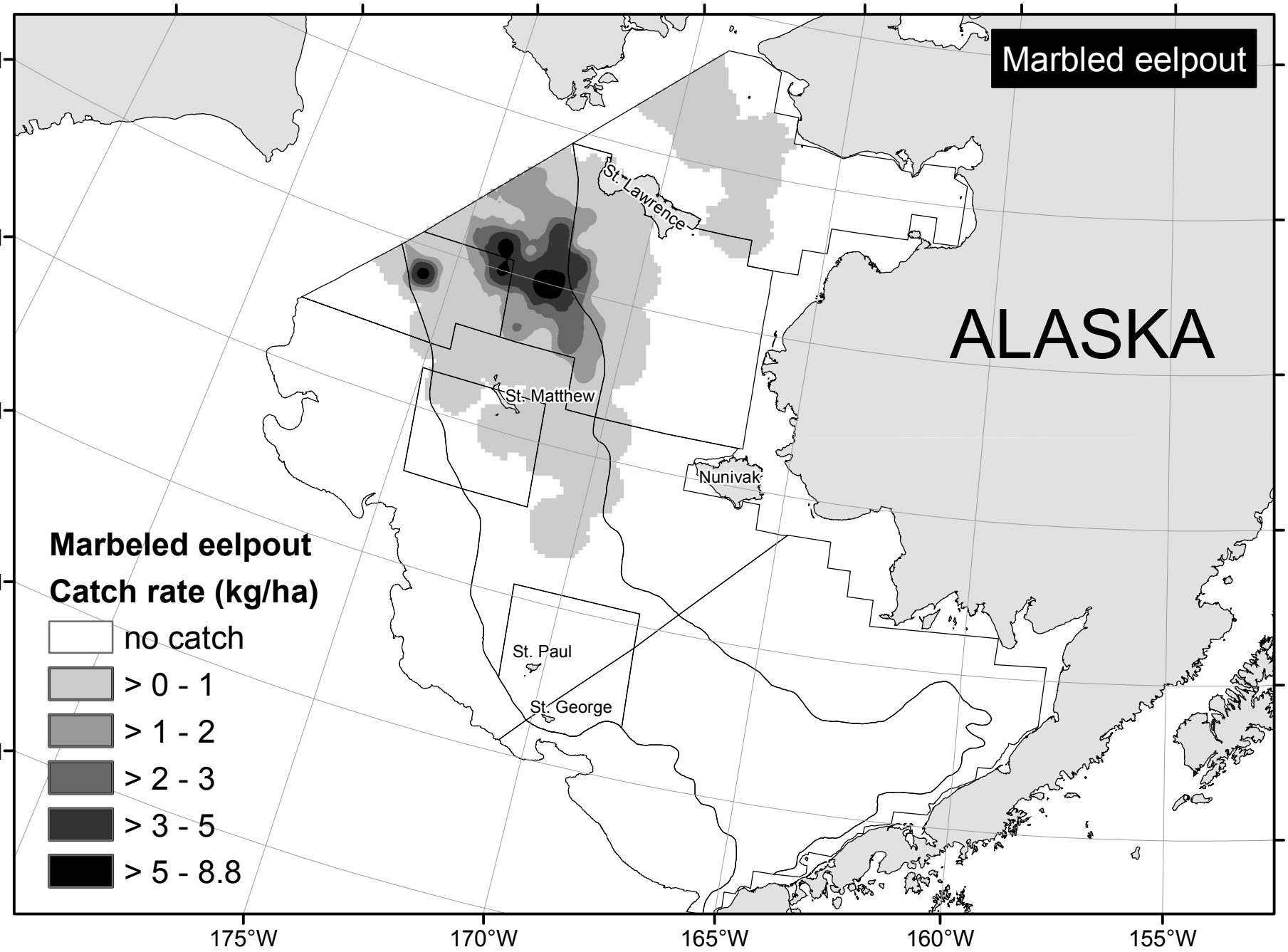

Figure 55. -- Distribution and relative abundance (kg/ha) of **marbled eelpout** (*Lycodes raridens*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

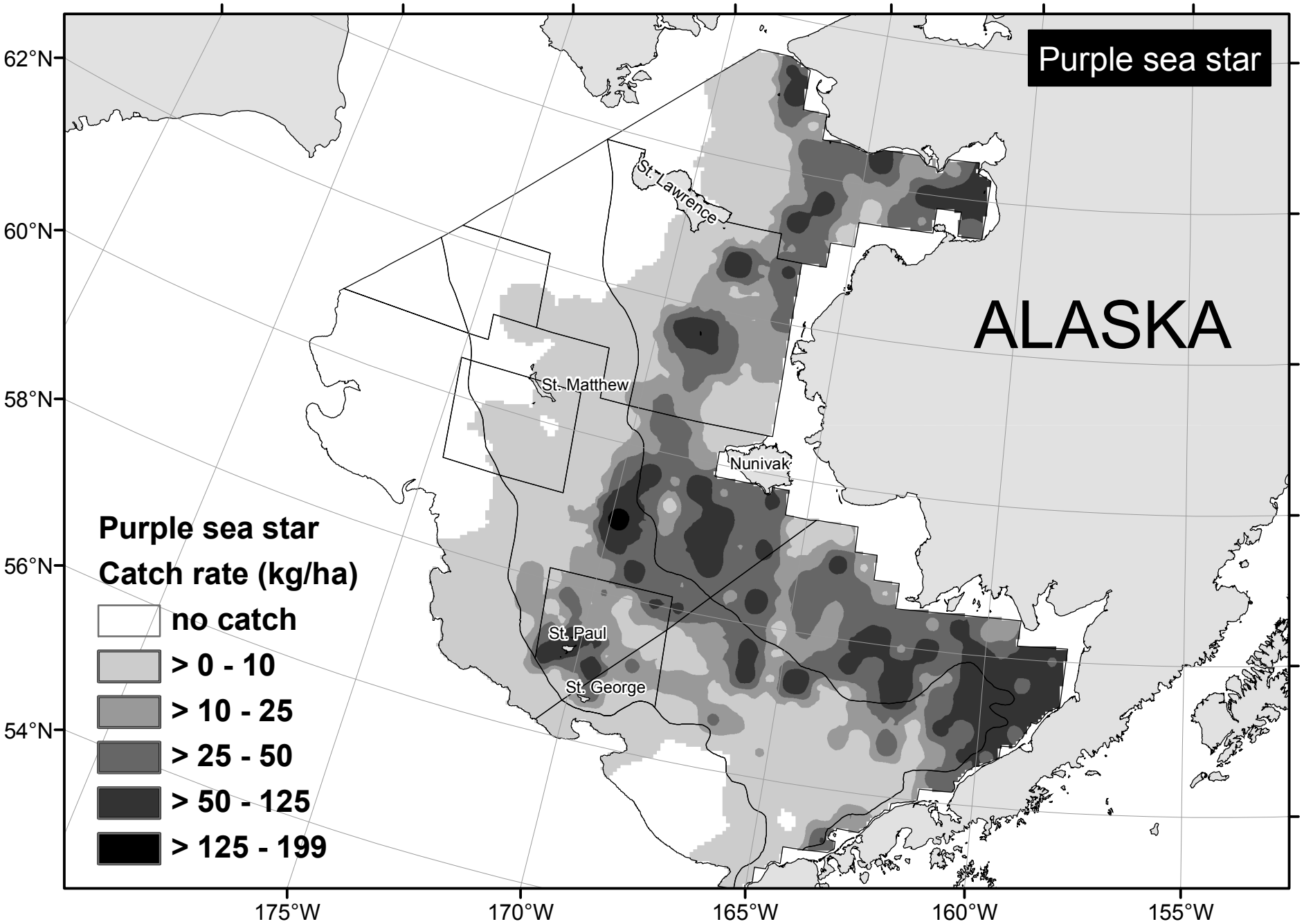

Figure 56. -- Distribution and relative abundance (kg/ha) of the **purple sea star** (*Asterias amurensis*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

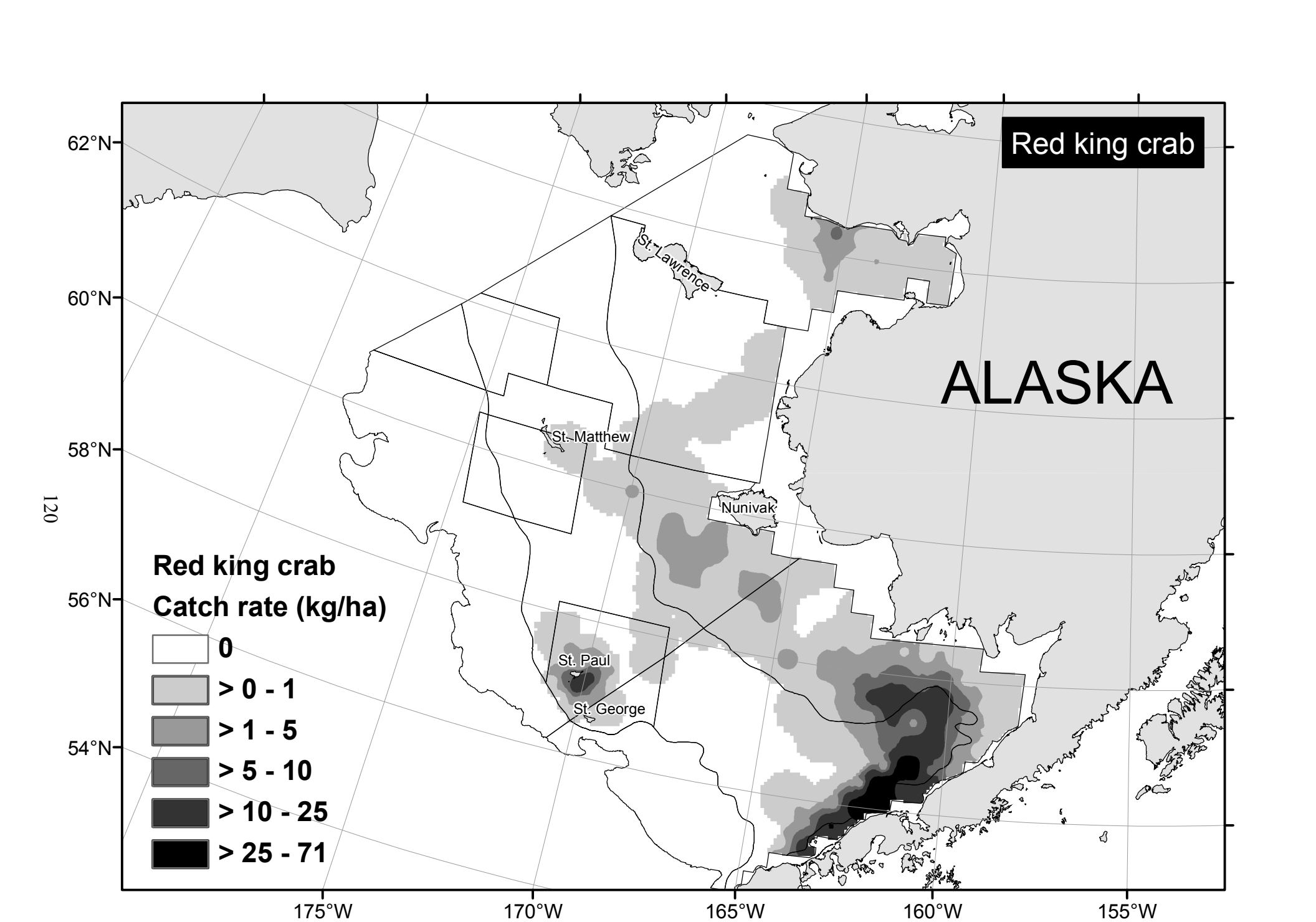

Figure 57. -- Distribution and relative abundance (kg/ha) of the **red king crab** (*Paralithodes camtschatica*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

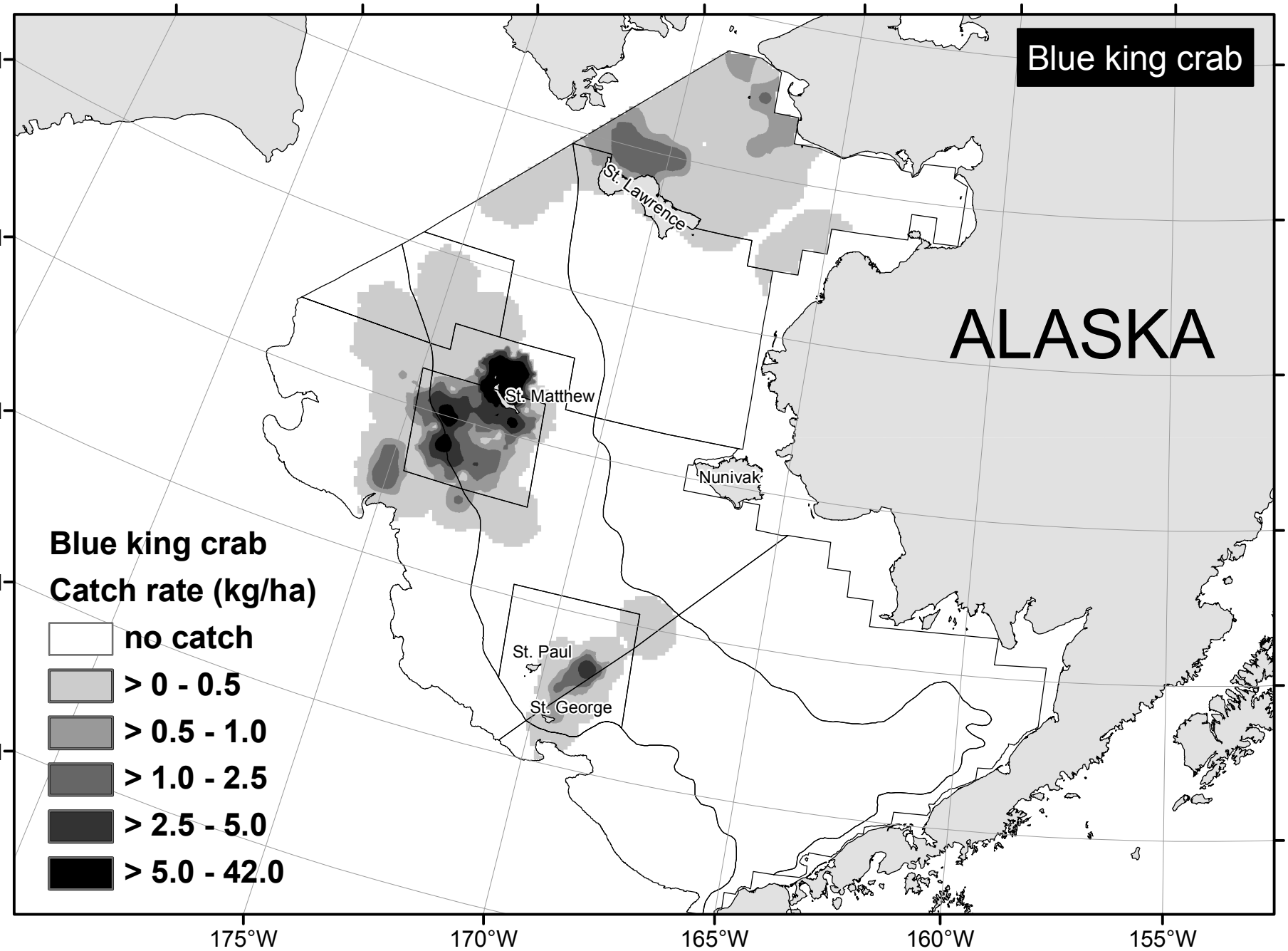

Figure 58. -- Distribution and relative abundance (kg/ha) of the **blue king crab** (*Paralithodes platypus*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

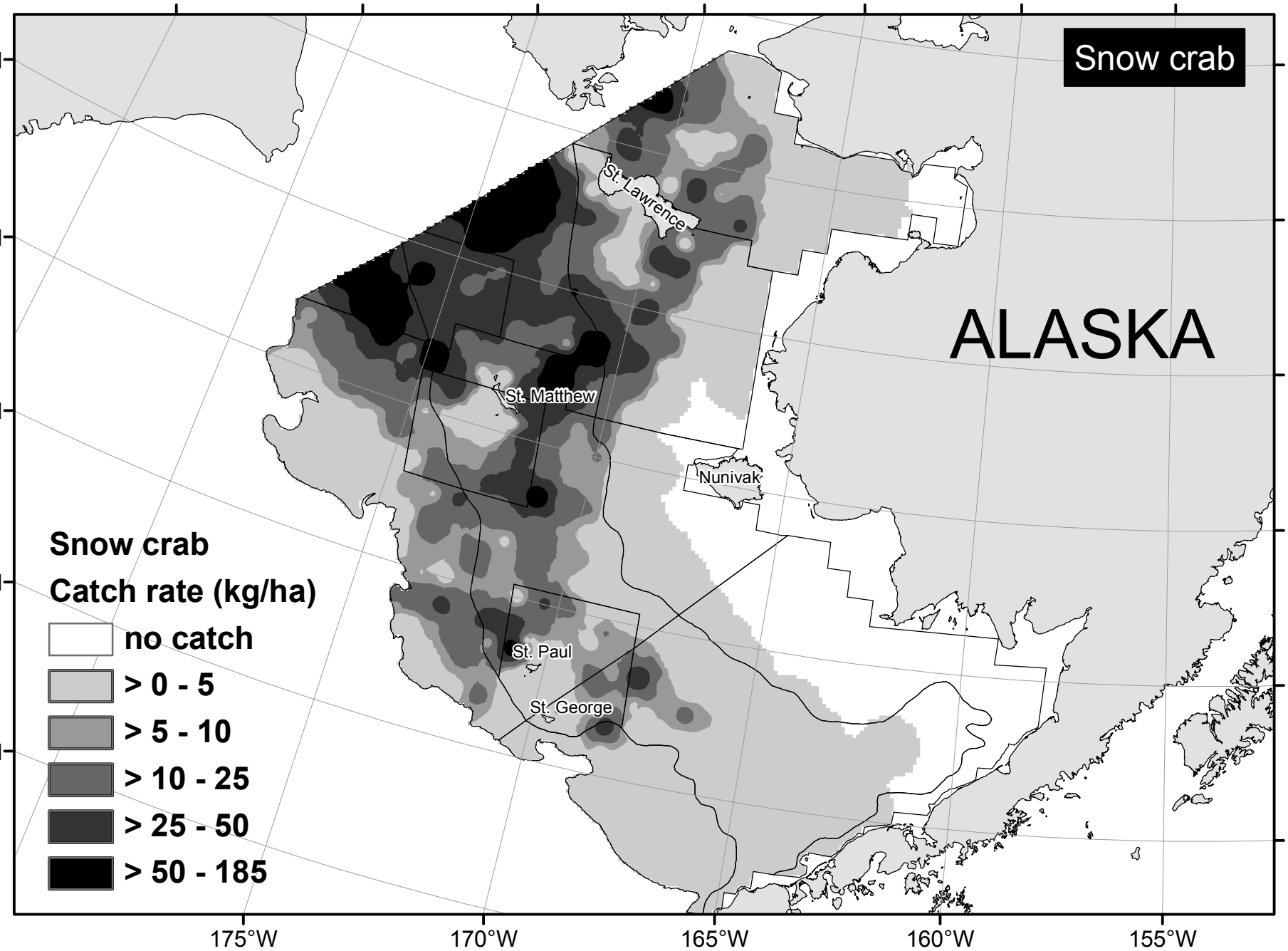

Figure 59. -- Distribution and relative abundance (kg/ha) of **snow crab** (*Chionoecetes opilio*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

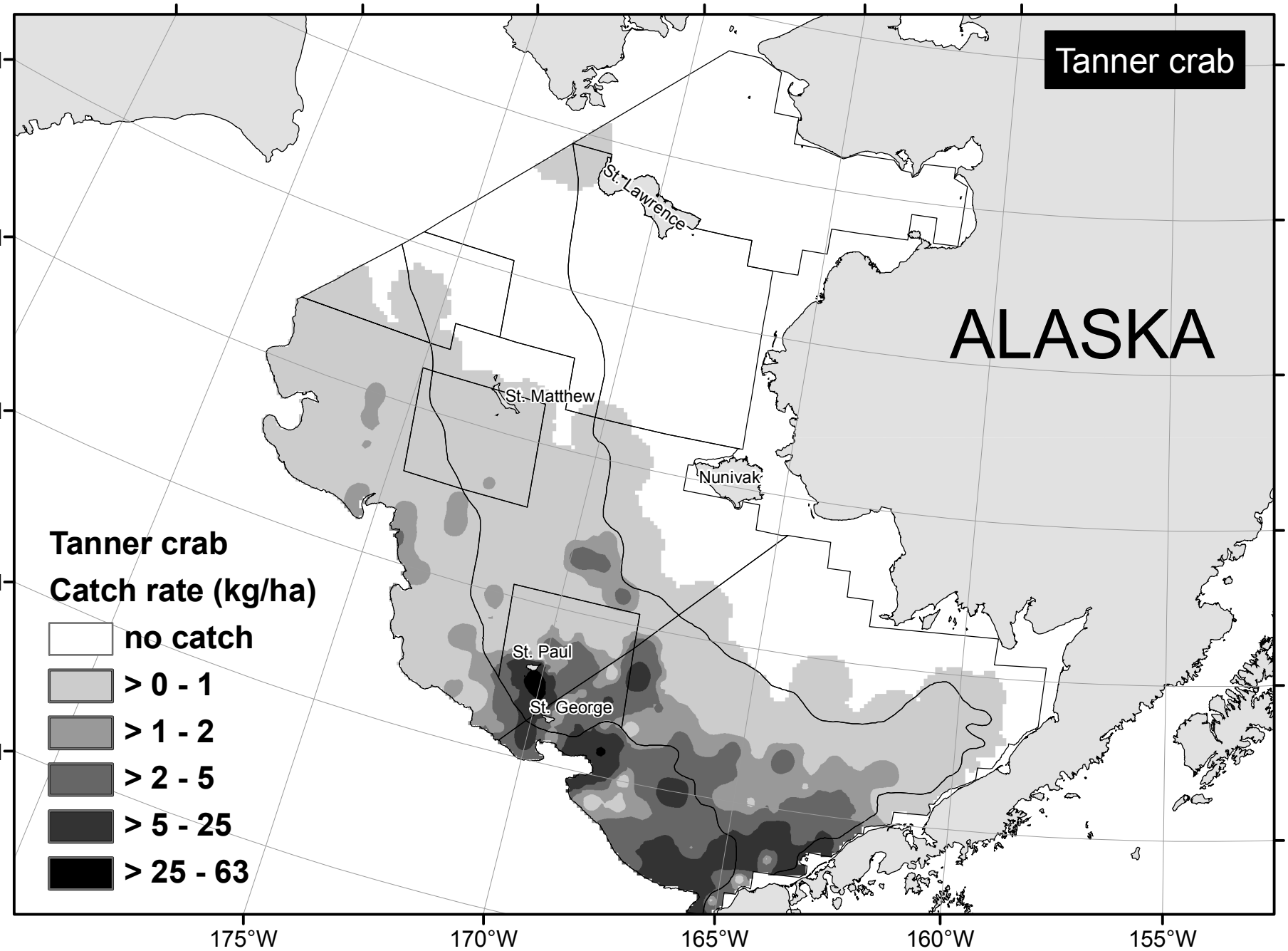

Figure 60. -- Distribution and relative abundance (kg/ha) of **Tanner crab** (*Chionoecetes bairdi*) for the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey.

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Appendices

Appendix A: Station and Catch Data

Appendix A contains station data by vessel for the 376 successfully completed standard survey stations in the eastern Bering Sea and 142 successfully completed standard survey stations in the northern Bering Sea. In using the tables, the following should be noted:

1. Time represents the nearest hour and minute at the start of the haul in Alaska Daylight Time (ADT).
2. Haul numbers are not always sequential because unsatisfactory hauls were omitted.
3. All longitudes are in the Western Hemisphere and latitudes in the Northern Hemisphere. Starting and ending positions for each haul are displayed as degrees and decimal minutes.
4. Net measured codes are as follows:

   Y = Net width was measured by net mensuration gear.

   N = Net width was estimated from a function of wire out or wire out.
5. Catch weights are displayed in total kilograms.

List of Tables

Appendix A Table 1 – Haul data for stations sampled by the FV *Aldebaran.*

Appendix A Table 2 – Haul data for stations sampled by the FV *Alaska Knight.*

Appendix A Table 3 – Haul data for stations sampled by the FV *Vesteraalen.*

Appendix A Table 1. -- Haul and catch data for successfully completed tows by FV *Aldebaran* during the 2010 eastern and northern Bering Sea bottom trawl survey.

Station	**H-16**	**I-16**	**J-16**	**J-15**	**K-14**	**J-14**	**I-14**	**H-14**	**G-14**	**F-14**	**F-13**
Start date and time	6/7/10 8:17	6/7/10 10:49	6/7/10 13:32	6/7/10 15:57	6/8/10 7:05	6/8/10 9:44	6/8/10 12:18	6/8/10 14:38	6/8/10 17:12	6/9/10 7:11	6/9/10 9:41
Haul number	2	3	4	5	6	7	8	9	10	11	12
Start latitude	5719.38	5739.35	5759.04	5759.29	5820.61	5800.63	5740.65	5721.90	5700.99	5641.13	5639.98
Start longitude	15935.00	15938.09	15940.30	15903.89	16026.87	16023.88	16021.92	16020.14	16018.21	16014.44	16138.86
End latitude	5720.62	5740.89	5800.57	5800.35	5818.97	5759.04	5739.07	5720.23	5659.39	5640.02	5639.90
End longitude	15936.08	15938.18	15939.88	15901.82	16026.85	16023.98	16021.53	16019.54	16017.94	16012.52	16135.91
Bottom depth (m)	32	37	35	40	25	43	50	55	56	40	60
Duration (h)	0.46	0.52	0.52	0.52	0.55	0.54	0.53	0.56	0.55	0.52	0.55
Distance fished (km)	2.53	2.85	2.87	2.84	3.04	2.96	2.97	3.16	2.99	2.85	3.03
Net width (m)	14.52	14.52	14.52	15.52	14.52	15.92	15.92	16.76	17.52	14.52	16.76
Net measured?	N	N	N	Y	N	N	N	N	Y	N	N
Performance	1	0	0	0	0	0	0	0	0	0	0
Alaska skates	93.9	37.3	5.6	51.7	33.4	29.2	8.1	22.4	11.3	33.8	7.9
Other skates											
Sharks											
Total elasmobranch	**93.9**	**37.3**	**5.6**	**51.7**	**33.4**	**29.2**	**8.1**	**22.4**	**11.3**	**33.8**	**7.9**
Alaska plaice				1.1	111.4	6.7			2.9		
Arrowtooth flounder									0.7		6.5
Flathead sole	4.2		2.5			5.6	5.4	1.9	8.8	1.4	1.7
Greenland turbot											
Pacific halibut	23.4	45.2	9.5	27.9	13.9	79.5	34.1	35.2	3.2	81.7	24.6
Rock sole	1125.9	687.2	148.5	887.2	61.6	993.3	743.6	286.9	675.8	153.9	143.0
Yellowfin sole	867.2	558.1	1694.5	343.5	1644.1	64.7	212.3	81.3	394.5	145.2	465.3
Other flatfish		29.1	2.8	27.9	314.3	12.0	47.3	7.5	3.1	215.6	16.6
Total flatfish	**216.5**	**1319.7**	**2773.2**	**4346.8**	**2694.1**	**1822.2**	**136.9**	**41.9**	**1151.7**	**2396.3**	**1556.2**
Walleye pollock	76.5						4.3	9.8	77.7	3.0	5.3
Pacific cod	63.7	167.8	4.2	22.4		6.1	58.7	31.7	74.2	11.4	39.4
Sablefish											
Atka mackerel											
Eelpouts											
Pacific herring	19.7	4.0				1.3					
Pacific ocean perch											
Sculpins	13.5	39.4	47.2	47.2	12.3	31.6	0.2	14.9	48.8	23.1	24.8
Other rockfish											
Other roundfish	5.6	3.1	21.3	4.8	5.1	18.3	2.8	0.9	4.2	0.7	3.3
Total roundfish	**178.6**	**214.3**	**18.6**	**74.2**	**125.4**	**57.2**	**65.9**	**57.3**	**24.9**	**127.4**	**387.7**
Blue king crab											
Red king crab				0.4		1.4	34.6	26.3	21.2	15.4	4.4
Tanner crab, bairdi							0.6	0.2			
Tanner crab, opilio											
Other crab	0.8	0.2	5.8	1.6	0.7	0.8	2.6	2.7	24.7	6.2	12.6
Shrimp	0.3			0.3	0.7	0.1		0.4	0.1		0.3
Octopus											
Squids											
Snails							0.6	0.5	2.8		2.8
Starfish	351.7	436.5	196.4	318.5	7.4	232.7	547.5	297.8	562.8	191.5	372.5
Other invertebrates	7.9	2.5	2.6	7.5	4.7	14.8	56.4	43.2	122.1	41.2	224.7
Total invertebrates	**36.6**	**439.2**	**24.9**	**327.0**	**75.2**	**249.5**	**641.8**	**37.7**	**733.8**	**253.6**	**653.2**
Miscellaneous	0.4	1.5	5.3	0.3		0.3	1.9	1.9	3.5	1.5	4.7
Total catch	**2654.0**	**212.0**	**312.0**	**482.0**	**2928.0**	**2164.0**	**1761.0**	**874.0**	**2114.0**	**2814.0**	**2620.0**

Appendix A Table 1. -- Continued.

Station	**F-13**	**F-12**	**G-12**	**H-12**	**I-12**	**J-12**	**K-12**	**K-11**	**K-10**	**H-10**	**G-10**	**F-10**
Start date and time	6/9/10 9:41	6/9/10 12:07	6/9/10 14:50	6/9/10 17:25	6/10/10 7:05	6/10/10 9:36	6/10/10 12:13	6/10/10 14:59	6/10/10 17:39	6/11/10 7:11	6/11/10 9:43	6/11/10 12:12
Haul number	12	13	14	15	16	17	18	19	20	21	22	23
Start latitude	5639.98	5640.25	5658.83	5719.26	5739.35	5759.12	5819.47	5820.01	5819.65	5720.84	5700.85	5640.51
Start longitude	16138.86	16102.23	16102.09	16104.15	16106.94	16108.00	16115.14	16235.82	16358.33	16350.75	16349.88	16348.64
End latitude	5639.90	5640.29	5700.39	5720.84	5740.96	5800.72	5819.44	5818.45	5819.54	5719.29	5659.21	5638.88
End longitude	16135.91	16259.33	16102.63	16104.30	16107.10	16108.20	16112.05	16235.65	16355.32	16350.66	16349.77	16348.09
Bottom depth (m)	60	68	62	63	58	46	24	34	47	52	61	72
Duration (h)	0.55	0.54	0.54	0.54	0.55	0.54	0.54	0.53	0.53	0.53	0.54	0.53
Distance fished (km)	3.03	2.98	2.95	2.94	2.99	2.97	3.03	2.91	2.98	2.88	3.04	3.08
Net width (m)	16.76	16.50	16.76	16.05	17.15	15.92	14.52	14.52	15.92	16.86	16.76	16.76
Net measured?	N	Y	N	Y	Y	N	N	N	N	Y	N	N
Performance	0	0	0	0	0	0	0	4	0	0	0	6
Alaska skates	7.9	17.6	4.3	13.8	21.3	13.9	22.9	134.1	32.5	19.4	6.6	3.0
Other skates												
Sharks												
Total elasmobranch	**7.9**	**17.6**	**4.3**	**13.8**	**21.3**	**13.9**	**22.9**	**134.1**	**32.5**	**19.4**	**6.6**	**3.0**
Alaska plaice		51.2	19.5	59.5	2.9	28.2	36.8	1.9	7.8	12.7	28.7	85.0
Arrowtooth flounder	6.5	2.9	4.1								2.4	0.6
Flathead sole	1.7	13.5	13.2	12.7	22.3	16.1		5.5		23.9	34.3	44.7
Greenland turbot												
Pacific halibut	24.6	8.9	17.2	7.0	32.5	45.5	112.0	74.2	19.4	3.6	32.3	33.4
Rock sole	143.0	643.2	36.8	396.4	354.8	1135.8	433.3	11.8	982.4	51.7	53.9	547.4
Yellowfin sole	465.3	875.9	522.5	25.1	173.7	528.6	913.8	589.8	244.4	364.7	15.5	197.5
Other flatfish	16.6	41.3	198.2	8.9	1.9	76.8	126.9	94.4	57.9			
Total flatfish	**1556.2**	**1622.6**	**168.4**	**677.0**	**583.8**	**1814.9**	**1622.8**	**177.4**	**1312.0**	**126.7**	**897.5**	**863.7**
Walleye pollock	5.3	33.6	93.6	157.8	7.8	9.9				94.3	15.2	32.4
Pacific cod	39.4	48.6	24.7	215.2	43.3	24.4	9.9	32.2		2282.9	225.8	29.3
Sablefish												
Atka mackerel												
Eelpouts												
Pacific herring												
Pacific ocean perch												
Sculpins	24.8	123.5		0.2	11.9	13.7	2.4	11.7	67.6	83.8	7.5	4.4
Other rockfish												
Other roundfish	3.3	4.3	6.6	1.5	3.8	4.3	6.9	41.7	16.2	2.4	2.2	5.8
Total roundfish	**387.7**	**21.3**	**124.7**	**374.5**	**129.6**	**51.3**	**37.3**	**355.5**	**83.6**	**2463.2**	**385.7**	**72.0**
Blue king crab												
Red king crab	4.4	25.5	69.1	19.6	54.8	24.0		2.9	5.1	19.3	6.5	2.2
Tanner crab, bairdi		2.6	0.3								0.7	4.9
Tanner crab, opilio												0.8
Other crab	12.6	2.8	12.2	1.8	5.3	1.6	2.4	4.7	6.1	6.0	7.8	3.1
Shrimp	0.3		0.1	0.5	0.2	0.3	0.2	0.1	0.1			4.0
Octopus												
Squids												
Snails	2.8	0.2	0.9	2.7	11.4				5.2	5.8		1.3
Starfish	372.5	119.8	36.4	173.7	11.5	128.0	258.4	77.1	169.3	521.4	121.8	221.6
Other invertebrates	224.7	298.6	14.8	216.4	93.2	4.5	5.6	4.8	1.2	3.5	168.2	11.6
Total invertebrates	**653.2**	**674.5**	**529.8**	**413.6**	**274.8**	**157.6**	**266.5**	**88.8**	**187.5**	**582.9**	**35.8**	**344.7**
Miscellaneous	4.7	0.2	2.0	1.2	2.6	0.2	0.6	0.3	0.8	3.9	0.9	2.5
Total catch	**2620.0**	**2538.2**	**1742.1**	**1492.0**	**134.4**	**254.0**	**1952.0**	**2354.1**	**1616.0**	**4120.0**	**1630.0**	**1330.0**

Appendix A Table 1. -- Continued.

Station	**E-10**	**D-10**	**B-08**	**C-08**	**D-08**	**E-08**	**F-08**	**G-08**	**H-08**	**I-08**	**J-08**	**K-08**
Start date and time	6/11/10 14:36	6/11/10 17:07	6/12/10 7:07	6/12/10 9:43	6/12/10 12:24	6/12/10 15:12	6/13/10 7:14	6/13/10 9:41	6/13/10 12:09	6/13/10 14:50	6/13/10 17:31	6/14/10 7:09
Haul number	24	25	26	27	28	29	30	31	32	33	34	35
Start latitude	5620.84	5600.75	5519.49	5539.42	5559.11	5619.23	5639.54	5659.22	5719.24	5739.29	5759.37	5819.23
Start longitude	16348.63	16346.17	16434.14	16435.36	16436.51	16435.12	16437.30	16436.70	16436.96	16438.08	16437.27	16437.92
End latitude	5619.20	5559.18	5520.94	5540.99	5600.75	5620.78	5641.15	5700.78	5720.82	5740.83	5800.95	5820.72
End longitude	16348.15	16346.32	16434.85	16435.54	16436.58	16435.03	16437.07	16436.59	16436.94	16437.95	16436.85	16436.92
Bottom depth (m)	77	70	54	81	87	84	76	67	53	46	43	38
Duration (h)	0.55	0.54	0.51	0.54	0.56	0.53	0.55	0.53	0.54	0.53	0.53	0.53
Distance fished (km)	3.08	2.92	2.79	2.93	3.04	2.86	2.99	2.89	2.93	2.86	2.96	2.95
Net width (m)	17.34	17.58	15.92	17.24	16.76	17.11	17.31	16.76	16.76	15.92	15.92	14.52
Net measured?	Y	Y	N	Y	Y	Y	N	N	N	N	N	N
Performance	0	6	0	0	0	0	0	0	0	0	0	0
Alaska skates		21.6	73.3	28.7	14.7	2.4	17.7	23.1	16.0	22.1	26.1	2.8
Other skates			11.4									
Sharks												
Total elasmobranch		**21.6**	**84.7**	**28.7**	**14.7**	**2.4**	**17.7**	**23.1**	**16.0**	**22.1**	**26.1**	**2.8**
Alaska plaice	85.7	3.9	53.6	83.4	12.5	3.9	5.4	371.5	185.8	49.5	68.7	12.3
Arrowtooth flounder	0.2	154.7	15.2	22.4	149.5	13.2						
Flathead sole	43.5	52.6	45.7	3.3	74.1	45.7	19.6	11.8	14.4	14.2	4.8	2.2
Greenland turbot												
Pacific halibut	8.6	55.0	21.1	12.7	24.5	49.5	19.6	6.4	8.9	16.4	53.3	23.4
Rock sole	857.9	457.0	934.9	319.5	155.9	72.9	43.2	7.8	765.0	594.4	729.9	497.2
Yellowfin sole	51.7	889.3	1137.9	279.5	75.4	92.0	192.7	316.1	174.9	1115.3	644.5	122.4
Other flatfish		2.6	3.9	3.1	0.7							
Total flatfish	**1462.2**	**158.4**	**231.4**	**918.2**	**418.2**	**23.6**	**26.4**	**764.8**	**1134.5**	**1775.1**	**1495.0**	**1824.7**
Walleye pollock	77.3	582.2	360.0	1166.3	122.8	945.3	471.4	0.8	56.3	2.7	2.0	3.4
Pacific cod	2.6	232.2	49.7	86.2	269.3	149.5	28.7	4.9	22.8	55.3	149.5	72.3
Sablefish												
Atka mackerel												
Eelpouts							2.3					
Pacific herring												
Pacific ocean perch												
Sculpins	14.2	8.2	47.9	17.9	3.8		35.7		32.6	1.6	15.3	37.7
Other rockfish												
Other roundfish	6.9	7.7	6.9	12.1	6.4	0.7		0.3	4.6	0.5	1.4	1.4
Total roundfish	**118.1**	**83.2**	**463.6**	**1282.6**	**41.6**	**195.2**	**538.1**	**6.2**	**116.3**	**6.1**	**177.2**	**114.8**
Blue king crab												
Red king crab	7.4	176.1	6.4	23.9				3.6			17.1	3.4
Tanner crab, bairdi	9.5	1.9	59.9	18.5	22.3	4.6	3.8	3.0	0.1	0.4		
Tanner crab, opilio	1.9	5.7	0.2	1.6	2.9		1.5	2.2				
Other crab	5.5	4.3	7.5	3.6	49.3	15.5	38.9	1.7	3.4	3.6	8.2	12.4
Shrimp						0.4	0.2	0.3	0.1			
Octopus												
Squids												
Snails	22.9	2.3	5.9	55.6	84.8	23.0	95.1	64.4	26.6	0.9	3.9	0.7
Starfish	53.8	25.1	23.3	28.1	1.3	14.8	73.4	38.3	28.8	287.8	241.7	118.7
Other invertebrates	361.0	241.5	195.2	112.5	135.2	685.7	337.7	478.0	331.5	233.4	55.2	0.2
Total invertebrates	**462.0**	**465.1**	**559.3**	**27.6**	**294.9**	**743.7**	**55.6**	**599.6**	**389.7**	**525.8**	**325.9**	**135.4**
Miscellaneous	2.3	0.1	6.5	4.8	32.5	32.4	2.8	8.6	2.9	0.6	3.1	0.1
Total catch	**288.3**	**295.0**	**3866.1**	**2534.0**	**1236.2**	**2168.2**	**1414.1**	**1414.0**	**1674.2**	**2398.0**	**232.0**	**280.0**

Appendix A Table 1. -- Continued.

Station	**L-08**	**M-08**	**N-07**	**N-06**	**M-06**	**L-06**	**L-07**	**M-07**	**K-06**	**J-06**	**I-06**	**H-06**
Start date and time	6/14/10 9:31	6/14/10 11:49	6/14/10 15:02	6/15/10 7:06	6/15/10 9:54	6/15/10 12:48	6/15/10 15:42	6/15/10 18:18	6/16/10 7:10	6/16/10 10:14	6/16/10 12:59	6/16/10 15:46
Haul number	36	37	38	39	40	41	42	43	44	45	46	47
Start latitude	5839.25	5858.59	5918.33	5920.46	5901.05	5840.81	5839.14	5859.07	5821.04	5800.99	5741.05	5720.28
Start longitude	16438.57	16438.88	16400.92	16520.71	16520.89	16520.87	16558.59	16559.66	16521.65	16523.00	16522.70	16522.87
End latitude	5840.85	5900.17	5919.78	5918.91	5859.54	5839.29	5840.64	5900.60	5819.46	5759.91	5739.50	5718.72
End longitude	16438.16	16438.55	16559.63	16520.77	16521.25	16520.97	16559.28	16400.00	16521.87	16522.97	16522.53	16522.61
Bottom depth (m)	33	24	24	22	29	38	35	28	44	46	54	65
Duration (h)	0.53	0.54	0.54	0.54	0.53	0.51	0.52	0.53	0.54	0.38	0.51	0.53
Distance fished (km)	2.99	2.95	2.95	2.87	2.82	2.82	2.86	2.86	2.95	2.01	2.89	2.90
Net width (m)	14.52	14.52	14.52	14.52	14.52	14.52	14.52	14.52	16.36	15.92	15.54	16.72
Net measured?	N	N	N	N	N	N	N	N	Y	N	Y	Y
Performance	0	0	0	0	0	0	0	0	0	5	0	0
Alaska skates	9.6		6.6	8.6	13.5	3.9	18.4		58.7	19.2	18.0	7.3
Other skates												
Sharks												
Total elasmobranch	**9.6**		**6.6**	**8.6**	**13.5**	**3.9**	**18.4**		**58.7**	**19.2**	**18.0**	**7.3**
Alaska plaice	15.6	3.1	9.2	19.1	49.3	129.6	58.0	43.9	69.1	79.3	65.5	53.7
Arrowtooth flounder												
Flathead sole										2.2		
Greenland turbot												
Pacific halibut	33.8	1.3			14.3	13.2	13.5	1.2	47.3	17.3	8.5	1.6
Rock sole	368.5	135.8	536.8	26.0	87.2	281.5	166.0	585.6	223.7	484.3	247.4	24.4
Yellowfin sole	4254.2	916.2	499.6	674.4	2964.2	194.4	68.7	5438.5	762.7	33.1	17.0	59.6
Other flatfish	13.6	116.7	14.7	19.2		0.3	8.8	14.5				
Total flatfish	**4775.7**	**2414.6**	**16.3**	**918.3**	**3114.8**	**619.6**	**84.5**	**683.3**	**112.5**	**884.0**	**482.4**	**589.3**
Walleye pollock	0.2		0.4	0.2	0.5	3.1	15.3		47.6	3.4	18.5	2.2
Pacific cod	78.5	0.5			0.2	0.2	33.5		442.8	29.8	1.6	2.9
Sablefish												
Atka mackerel												
Eelpouts												
Pacific herring		1.6		0.3		0.3						
Pacific ocean perch												
Sculpins	15.5	81.2	46.5	42.5	31.3	17.4	17.0	121.9	33.2	2.2	1.8	0.3
Other rockfish												
Other roundfish	0.9	3.4	2.6	2.4	2.4	2.2	1.7	0.9	0.9	0.4	2.4	2.6
Total roundfish	**94.9**	**86.7**	**49.9**	**44.6**	**34.3**	**22.9**	**67.4**	**122.8**	**524.5**	**53.8**	**33.3**	**26.1**
Blue king crab												
Red king crab				0.8						6.1		
Tanner crab, bairdi												
Tanner crab, opilio												1.8
Other crab	0.9	1.6	0.7	0.9	0.2	6.8	8.4		36.5	11.7	24.8	169.6
Shrimp	0.2	0.3	0.4	0.8		6.0	6.0				0.7	0.1
Octopus												
Squids												
Snails						0.4			19.4	12.4	6.6	55.9
Starfish	16.5	32.4	13.8		42.2	174.3	111.3	289.8	226.2	9.8	74.8	552.8
Other invertebrates	0.4	0.8	1.7	4.0	5.0	16.8	1.9		88.8	61.4	1125.8	48.5
Total invertebrates	**161.7**	**34.8**	**15.9**	**2.6**	**47.3**	**198.1**	**121.6**	**289.8**	**37.9**	**182.3**	**123.7**	**126.7**
Miscellaneous	0.5	2.3	0.3	0.1		1.2	0.6		35.5	17.3	55.7	18.8
Total catch	**542.1**	**2538.1**	**1132.0**	**974.1**	**330.0**	**845.3**	**148.4**	**6496.0**	**292.1**	**1158.8**	**1821.0**	**192.2**

Appendix A Table 1. -- Continued.

Station	**G-06**	**F-06**	**E-06**	**D-06**	**C-06**	**B-06**	**A-06**	**A-05**	**AZ0504**	**Z-05**	**A-04**	**B-03**
Start date and time	6/17/10 7:07	6/17/10 9:58	6/17/10 12:42	6/17/10 15:27	6/17/10 18:13	6/18/10 7:14	6/18/10 9:44	6/18/10 12:24	6/18/10 14:50	6/18/10 17:18	6/19/10 11:14	6/19/10 14:48
Haul number	48	49	50	51	52	53	54	55	56	57	58	59
Start latitude	5700.85	5640.67	5620.96	5600.70	5540.62	5520.75	5502.02	5459.81	5450.07	5442.39	5458.47	5519.74
Start longitude	16524.03	16523.60	16525.01	16524.92	16524.54	16525.29	16524.89	16652.73	16630.45	16651.86	16614.58	16739.82
End latitude	5659.31	5639.03	5619.32	5559.07	5539.01	5519.11	5500.57	5500.01	5449.88	5440.82	5500.17	5521.03
End longitude	16523.64	16523.56	16525.23	16525.17	16524.18	16525.38	16523.82	16649.89	16627.58	16652.19	16614.38	16738.10
Bottom depth (m)	69	75	88	93	96	101	64	111	155	82	131	132
Duration (h)	0.52	0.54	0.55	0.55	0.55	0.54	0.53	0.56	0.55	0.54	0.56	0.55
Distance fished (km)	2.89	3.03	3.06	3.04	2.99	3.03	2.92	3.05	3.10	2.93	3.16	3.03
Net width (m)	16.76	18.15	18.04	17.72	17.72	17.72	16.76	18.02	18.43	17.31	18.25	18.25
Net measured?	N	Y	Y	N	N	N	N	N	N	N	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	21.4	39.3	1.9	34.2	4.1	4.4	29.2	48.7	23.8	146.9	13.2	
Other skates					2.4	2.6	76.0	0.9	51.5	43.0		6.1
Sharks												
Total elasmobranch	**21.4**	**39.3**	**1.9**	**34.2**	**6.6**	**42.9**	**15.2**	**49.7**	**75.3**	**189.8**	**13.2**	**6.1**
Alaska plaice	13.2	17.9	3.1									
Arrowtooth flounder			3.5	6.6	155.1	437.8	23.8	364.9	18.4	587.3	43.5	212.4
Flathead sole	6.3	27.5	247.4	56.8	73.6	84.8	1.5	24.5	2.7	129.8	31.5	42.4
Greenland turbot	0.1	0.2										
Pacific halibut	6.3	12.5	4.5	8.5		9.2	92.4	18.3	7.7	48.6	14.3	6.3
Rock sole	6.8	9.5	29.2	482.5	44.1	1.9	12.5	12.6	1.6	218.6		
Yellowfin sole	178.7	137.8	13.1				49.9			24.5		
Other flatfish					2.5	65.8		222.0	2.8	65.9	8.6	7.5
Total flatfish	**24.9**	**177.6**	**89.4**	**551.7**	**21.7**	**514.7**	**286.6**	**617.7**	**29.9**	**944.8**	**453.5**	**226.3**
Walleye pollock	2.6	1.7	399.6	888.1	3.2	1446.7	159.3	511.3	2.8	4455.7		
Pacific cod	32.4	54.6	289.4	51.8	7.4	47.4	3.4	17.7	15.3	32.1	2.6	
Sablefish												
Atka mackerel										11.2		
Eelpouts	5.5	5.3	0.8		0.9			0.9				0.4
Pacific herring												
Pacific ocean perch								0.2	0.7			
Sculpins	1.4	5.3					32.4	8.6	0.6	15.8	1.6	0.5
Other rockfish												1.2
Other roundfish	2.2	0.1	1.2	0.3	1.4		28.8	0.7	15.4	11.8	0.3	21.4
Total roundfish	**43.5**	**76.0**	**691.2**	**94.2**	**12.9**	**1494.2**	**1654.6**	**539.3**	**52.8**	**4526.5**	**4.0**	**23.2**
Blue king crab												
Red king crab												
Tanner crab, bairdi	1.6	4.3	9.0	4.8	2.3	83.9	1.8	19.5	127.9	4.0	64.5	32.4
Tanner crab, opilio	3.9	1.2	1.7	2.2	6.4	8.8	0.4	6.8	2.5	0.2	3.1	2.4
Other crab	6.5	68.5	69.6	171.3	69.4	3.3	0.5	14.3	12.5	0.7	5.5	1.8
Shrimp	0.2	0.2				0.7		0.2	2.2		2.8	0.5
Octopus						0.5			6.0			
Squids									0.1			0.2
Snails	78.8	129.9	115.4	96.3	17.1	54.7	22.7	44.9	21.2	1.3	14.5	5.3
Starfish	56.2	32.5	28.2	0.2		0.6	29.3	6.0	3.5		4.0	
Other invertebrates	156.4	133.5	92.2	144.3	342.7	116.2	568.7	42.4	58.9	193.8	22.8	13.6
Total invertebrates	**356.7**	**369.9**	**316.0**	**418.7**	**68.9**	**294.5**	**623.4**	**133.4**	**228.6**	**28.2**	**112.4**	**55.9**
Miscellaneous	12.8	77.8	87.6	28.4	52.3	17.1	4.7	1.4	1.2	0.8	1.3	0.3
Total catch	**645.2**	**768.2**	**1442.0**	**221.0**	**146.0**	**2448.1**	**2676.0**	**1582.2**	**57.7**	**62.0**	**615.4**	**354.5**

Appendix A Table 1. -- Continued.

Station	**C-03**	**C-04**	**D-04**	**E-04**	**F-04**	**G-04**	**H-04**	**I-04**	**J-04**	**K-04**	**L-04**	**M-04**
Start date and time	6/19/10 17:27	6/20/10 7:10	6/20/10 9:50	6/20/10 12:18	6/20/10 14:46	6/20/10 17:15	6/21/10 7:08	6/21/10 9:47	6/21/10 12:25	6/21/10 14:54	6/21/10 17:15	6/22/10 7:07
Haul number	60	61	62	63	64	65	66	67	68	69	70	71
Start latitude	5538.99	5539.21	5559.55	5619.46	5639.38	5659.10	5719.27	5739.14	5759.33	5819.30	5839.08	5859.27
Start longitude	16736.97	16611.80	16612.74	16611.77	16609.41	16609.21	16607.97	16606.57	16605.75	16605.72	16604.27	16604.12
End latitude	5540.56	5540.79	5601.19	5621.09	5641.00	5700.67	5720.80	5740.69	5800.90	5820.79	5840.58	5900.82
End longitude	16737.01	16611.62	16612.53	16611.53	16609.22	16609.45	16607.36	16606.04	16605.30	16604.88	16604.45	16603.84
Bottom depth (m)	126	117	107	92	78	72	68	63	56	44	38	31
Duration (h)	0.54	0.54	0.55	0.54	0.54	0.55	0.53	0.53	0.54	0.54	0.51	0.52
Distance fished (km)	2.91	2.94	3.07	3.03	3.01	2.93	2.91	2.92	2.97	2.88	2.79	2.89
Net width (m)	18.02	18.02	18.02	17.04	17.45	17.12	16.76	16.76	16.76	15.17	14.52	14.52
Net measured?	N	N	N	Y	Y	Y	N	N	N	Y	N	N
Performance	6	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	12.6		6.4	138.0	22.9	29.4	48.7	25.5	29.7	58.9	36.7	115.6
Other skates	0.3	3.5	0.5									
Sharks												
Total elasmobranch	**12.6**	**3.5**	**6.5**	**138.0**	**22.9**	**29.4**	**48.7**	**25.5**	**29.7**	**58.9**	**36.7**	**115.6**
Alaska plaice				139.5	4.6	56.1	266.8	127.2	16.0	97.7	119.8	82.3
Arrowtooth flounder	152.5	86.8	258.5	59.6								
Flathead sole	63.3	58.6	132.8	356.4	5.9	5.8	15.4	0.5	0.2	1.2	0.6	
Greenland turbot						0.4		0.5	0.8			
Pacific halibut	1.2	0.7	8.9	9.1	1.5	2.5	14.8	22.9	3.5	46.3	34.4	18.2
Rock sole			0.3	616.8	9.4	1.4	29.8	4.6	11.3	24.2	24.5	251.3
Yellowfin sole				5.4	3.5	233.3	1111.4	341.4	342.6	219.1	213.6	142.8
Other flatfish	1.8	1.4	2.3								0.4	36.8
Total flatfish	**155.5**	**88.9**	**269.2**	**829.5**	**45.5**	**32.2**	**1422.5**	**495.6**	**616.6**	**567.4**	**68.3**	**152.6**
Walleye pollock			9.9	162.5	9.1	5.8	2.4	1.5	8.9	7.9	9.7	
Pacific cod		6.3	21.1	282.6	13.7	2.6	29.3	7.3	24.1	49.7	23.1	33.3
Sablefish												
Atka mackerel												
Eelpouts	0.4	0.8	0.2	2.2	1.2			1.4				
Pacific herring											0.4	
Pacific ocean perch												
Sculpins	0.7	0.7			0.3	0.4	0.2	2.8	6.7	8.7	6.9	19.8
Other rockfish												
Other roundfish	1.8	2.2	1.8	0.8	0.1	0.2	0.5	0.7	31.2	11.4	3.7	2.2
Total roundfish	**11.3**	**9.1**	**33.1**	**448.1**	**24.0**	**26.9**	**32.2**	**13.7**	**7.9**	**76.5**	**43.3**	**55.2**
Blue king crab												
Red king crab										1.5		16.0
Tanner crab, bairdi	14.8	17.2	13.3	15.8	6.9	2.2	0.4	0.5				
Tanner crab, opilio	0.8	5.3	1.8	3.8	1.8	25.6	4.9	3.0	0.9			
Other crab	3.7	7.9	23.1	26.2	53.6	65.4	21.3	12.7	17.6	7.7	11.2	2.6
Shrimp	0.4	0.8			0.1	0.2			0.5	0.3	0.3	0.2
Octopus												
Squids												
Snails	1.8	1.7	14.7	54.5	35.8	118.9	43.1	115.4	7.2	27.6	4.0	
Starfish	0.2			0.6	69.4	72.8	386.7	412.3	22.6	351.5	115.9	272.7
Other invertebrates	3.4	4.0	114.2	25.8	182.2	29.2	128.0	268.8	717.4	92.4	19.4	2.7
Total invertebrates	**24.3**	**62.9**	**166.9**	**35.4**	**358.8**	**493.9**	**584.5**	**919.3**	**153.7**	**48.8**	**149.7**	**294.8**
Miscellaneous		0.5	4.5	35.2	36.3	26.0	8.8	55.5	39.0	7.3	0.9	0.5
Total catch	**267.2**	**223.5**	**613.0**	**2112.2**	**493.3**	**92.0**	**2112.1**	**151.0**	**1811.0**	**1192.3**	**839.5**	**1986.0**

Appendix A Table 1. -- Continued.

Station	**N-04**	**O-04**	**O-03**	**N-03**	**N-02**	**M-02**	**M-01**	**L-01**	**L-02**	**K-02**	**J-02**	**I-02**
Start date and time	6/22/10 9:38	6/22/10 14:26	6/22/10 17:16	6/23/10 7:07	6/23/10 9:41	6/23/10 12:13	6/23/10 14:34	6/24/10 7:05	6/24/10 9:33	6/24/10 12:05	6/24/10 14:36	6/24/10 17:13
Haul number	72	74	75	76	77	78	79	80	81	82	83	84
Start latitude	5919.07	5938.36	5940.02	5920.24	5919.65	5901.11	5900.06	5839.75	5840.01	5820.77	5800.85	5740.96
Start longitude	16602.59	16603.39	16723.46	16726.09	16845.42	16845.14	16808.29	16807.04	16844.62	16848.43	16849.93	16851.49
End latitude	5920.61	5936.87	5939.98	5920.02	5919.42	5859.60	5900.20	5840.50	5839.44	5819.25	5759.29	5739.40
End longitude	16601.83	16604.43	16720.44	16723.07	16842.39	16845.06	16805.31	16809.68	16847.50	16847.85	16849.84	16851.42
Bottom depth (m)	25	26	28	28	32	39	42	47	44	52	64	68
Duration (h)	0.53	0.53	0.52	0.53	0.53	0.52	0.52	0.53	0.53	0.52	0.54	0.53
Distance fished (km)	2.95	2.94	2.85	2.91	2.92	2.81	2.87	2.93	3.00	2.88	2.91	2.90
Net width (m)	14.52	14.52	14.52	14.52	14.52	14.52	14.52	15.92	16.70	16.97	17.97	17.95
Net measured?	N	N	N	N	N	N	N	N	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	16.5	25.4	228.4	143.0	79.8	35.5	77.9	50.0	4.7	53.3	7.7	51.8
Other skates												
Sharks												
Total elasmobranch	**16.5**	**25.4**	**228.4**	**143.0**	**79.8**	**35.5**	**77.9**	**50.0**	**4.7**	**53.3**	**7.7**	**51.8**
Alaska plaice	9.3	7.1	8.3	43.8	5.3	55.5	39.6	14.8	84.6	174.2	42.5	46.3
Arrowtooth flounder												
Flathead sole								0.3	1.4	4.3	2.8	7.5
Greenland turbot											0.1	0.1
Pacific halibut	143.8	26.9	22.3	6.7	29.8	61.3	2.3	2.6	82.8	81.2	54.5	61.8
Rock sole	152.3	45.4	17.8	7.7	51.5	67.2	7.0	188.7	239.1	215.2	45.8	65.7
Yellowfin sole	256.8	326.2	264.3	289.7	116.9	14.7	88.7	124.1	6.4	294.2	31.7	255.7
Other flatfish	28.3	30.0	19.2	3.5	0.7		0.2					
Total flatfish	**59.2**	**435.6**	**332.0**	**467.2**	**248.4**	**324.7**	**191.8**	**438.2**	**466.8**	**764.6**	**813.6**	**789.1**
Walleye pollock	0.3		4.0	0.3	2.4	7.7	0.3	11.8	5.9	29.7	13.2	19.9
Pacific cod	12.6	0.8	4.2	0.9	8.6	7.3	13.0	23.6	91.8	41.4	84.5	56.7
Sablefish												
Atka mackerel												
Eelpouts											0.2	0.3
Pacific herring	82.2	836.6	57.4	4.6	0.8		0.1					
Pacific ocean perch												
Sculpins	16.4	8.3	5.4	13.6	4.6	13.6	1.2	8.6	1.9	27.8		0.6
Other rockfish												
Other roundfish	1.2	2.4	13.0	6.1	2.9	1.6	4.8	7.2	2.7	16.0	1.4	1.7
Total roundfish	**112.1**	**848.1**	**79.9**	**24.6**	**19.2**	**3.2**	**28.4**	**51.9**	**111.4**	**114.8**	**99.4**	**78.7**
Blue king crab												
Red king crab			1.9	3.8	5.9	2.1	12.0		4.9	0.8		
Tanner crab, bairdi												2.1
Tanner crab, opilio							0.1	0.1	0.2	0.2	2.3	19.4
Other crab	2.0	0.6	4.6	7.1	12.4	4.5	7.9	15.3	15.2	17.2	61.8	13.8
Shrimp	0.2	0.6	0.3	0.6	0.2	0.1	0.1	2.0	0.1	0.3		
Octopus												
Squids												
Snails	0.2					3.5	14.8	4.5	22.1	16.0	27.6	116.2
Starfish	178.8	228.2	184.3	17.3	34.5	27.1	236.2	221.3	334.6	21.3	158.6	68.8
Other invertebrates	0.3	1.6	0.2	2.7	0.4	11.5	17.2	4.4	22.2	116.1	224.9	219.4
Total invertebrates	**181.3**	**23.4**	**191.2**	**183.9**	**323.4**	**291.4**	**288.2**	**245.2**	**399.7**	**351.7**	**475.3**	**529.6**
Miscellaneous	0.5	0.6	0.5	0.6	0.8	1.4	2.0	1.5	4.6	9.3	29.4	29.3
Total catch	**99.6**	**1542.0**	**832.0**	**819.2**	**671.6**	**683.1**	**588.2**	**786.1**	**124.0**	**1298.0**	**1428.0**	**1486.4**

Appendix A Table 1. -- Continued.

Station	**H-02**	**G-02**	**G-01**	**F-01**	**F-02**	**E-02**	**D-02**	**C-02**	**A-03**	**A-02**	**B-02**	**F-19**
Start date and time	6/25/10 7:10	6/25/10 10:01	6/25/10 12:52	6/25/10 15:38	6/25/10 18:20	6/26/10 8:04	6/26/10 10:37	6/26/10 13:12	6/30/10 7:18	6/30/10 10:06	6/30/10 12:49	7/1/10 7:01
Haul number	85	86	87	88	89	90	91	92	93	94	95	96
Start latitude	5719.36	5701.06	5700.56	5641.11	5640.12	5620.70	5601.03	5541.15	5500.11	5500.06	5519.32	5639.85
Start longitude	16852.87	16854.58	16817.81	16819.98	16853.98	16858.40	16859.61	16700.41	16740.55	16704.41	16702.46	16904.81
End latitude	5720.93	5659.44	5658.98	5639.55	5640.20	5619.01	5559.37	5539.51	5500.27	5501.71	5520.95	5641.29
End longitude	16852.48	16854.67	16817.31	16820.26	16856.95	16858.44	16859.65	16700.48	16737.99	16703.48	16702.24	16906.23
Bottom depth (m)	71	74	77	100	96	113	134	134	144	154	139	100
Duration (h)	0.53	0.55	0.55	0.55	0.55	0.56	0.55	0.55	0.50	0.59	0.55	0.55
Distance fished (km)	2.94	3.02	2.98	2.91	3.05	3.15	3.09	3.06	2.76	3.23	3.03	3.05
Net width (m)	18.00	17.73	17.66	17.95	18.38	18.02	18.25	18.25	18.72	18.43	18.25	17.94
Net measured?	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	38.1	50.0	2.4	145.2	127.0	13.9	1.9		4.4			7.4
Other skates					2.9		0.8	0.1	9.0	17.5	0.8	2.8
Sharks					37.5							
Total elasmobranch	**38.1**	**50.0**	**2.4**	**145.2**	**167.3**	**13.9**	**2.7**	**0.1**	**13.4**	**17.5**	**0.8**	**1.2**
Alaska plaice	6.2	4.1	4.2	18.9	53.8							
Arrowtooth flounder		3.0		121.3	17.9	161.5	149.9	13.6	279.4	436.5	14.2	353.2
Flathead sole	13.9	9.7	21.6	269.1	111.1	164.7	222.2	86.7	71.5	87.9	84.6	43.4
Greenland turbot	0.9											
Pacific halibut	23.4	5.8	8.6	22.3	44.4	5.6	13.9	19.0	9.5	2.1		13.9
Rock sole	35.3	18.5	65.2	264.6	25.8	0.7						3.9
Yellowfin sole	88.1	15.9	13.5	2.7	4.9							
Other flatfish						7.2	3.8	5.6	12.6	9.2	12.3	
Total flatfish	**152.6**	**47.2**	**9.8**	**429.8**	**326.0**	**174.5**	**166.8**	**155.2**	**31.5**	**447.8**	**152.5**	**397.2**
Walleye pollock	24.8	82.6	15.9	1236.5	45.3	62.3	0.8					431.6
Pacific cod	19.5	15.4	76.5	91.5	57.8	11.8	74.9		6.6	0.5		29.8
Sablefish												
Atka mackerel												
Eelpouts		0.1		0.8	0.8	0.2	0.4	0.2	0.5		0.3	
Pacific herring												
Pacific ocean perch												
Sculpins	0.1	21.7	11.6	33.5	72.7	0.5	0.3	0.2	2.2	5.1	1.0	21.5
Other rockfish							2.8					
Other roundfish	2.3	0.7	5.4	5.6	4.8	1.7	16.2	41.9	6.4	8.2	16.4	4.3
Total roundfish	**46.7**	**12.5**	**244.3**	**1368.2**	**54.5**	**175.6**	**94.4**	**42.3**	**15.7**	**13.7**	**17.7**	**487.2**
Blue king crab												
Red king crab												
Tanner crab, bairdi	4.2	11.1	12.7	3.7	5.9	15.7	23.2	6.6	57.1	26.2	27.4	27.2
Tanner crab, opilio	34.6	3.5	22.2	7.4	3.7	4.6	3.5	1.3	3.4	2.8	0.6	26.9
Other crab	38.0	138.3	56.4	5.2	43.8	7.3	6.7	0.7	4.6	1.6	3.1	28.5
Shrimp	0.2	0.2	0.2	0.6		0.1	0.8	0.6	0.5	2.0	0.7	0.2
Octopus									0.5	14.9		
Squids												
Snails	33.9	168.4	1.0	3.8	89.3	8.2	3.7	1.7	1.9	26.8	6.2	24.2
Starfish	35.1	129.6	84.3	3.6	1.5	0.6	3.6	1.1	6.0	0.2	0.3	
Other invertebrates	1239.7	125.4	69.5	157.3	11.7	96.2	28.2	31.1	18.6	7.9	29.6	17.9
Total invertebrates	**1385.4**	**63.1**	**246.4**	**181.6**	**246.0**	**132.7**	**69.5**	**43.1**	**86.1**	**82.3**	**67.4**	**213.9**
Miscellaneous	55.3	15.7	12.5	2.7	27.1	0.6	0.8	0.1	1.1	0.6	0.2	16.1
Total catch	**1692.0**	**934.0**	**635.9**	**2396.0**	**1418.2**	**661.3**	**555.9**	**327.4**	**489.2**	**649.8**	**323.0**	**1168.0**

Appendix A Table 1. -- Continued.

Station	**GF1918**	**G-19**	**HG1918**	**H-19**	**IH1918**	**JI1918**	**I-19**	**IH2019**	**I-20**	**H-20**	**HG2019**	**HG2120**
Start date and time	7/1/10 9:21	7/1/10 11:54	7/1/10 14:18	7/1/10 16:59	7/2/10 7:11	7/2/10 9:46	7/2/10 12:10	7/2/10 14:21	7/2/10 17:17	7/3/10 7:05	7/3/10 9:09	7/3/10 11:44
Haul number	97	98	99	100	101	102	103	104	105	106	107	108
Start latitude	5649.39	5659.80	5709.26	5719.48	5729.28	5749.08	5740.33	5730.00	5739.48	5720.89	5711.13	5710.48
Start longitude	16922.74	16902.80	16921.91	16902.12	16914.89	16915.75	17058.05	17039.38	17021.80	17024.27	17040.95	17007.90
End latitude	5650.98	5701.36	5710.87	5720.32	5730.82	5750.66	5738.82	5729.98	5740.64	5719.29	5709.67	5709.86
End longitude	16922.04	16903.72	16922.08	17059.70	16915.29	16915.71	17058.05	17036.50	17019.88	17024.45	17041.86	17005.36
Bottom depth (m)	97	80	76	70	71	70	69	70	71	64	73	50
Duration (h)	0.55	0.55	0.55	0.52	0.52	0.53	0.51	0.52	0.53	0.54	0.52	0.52
Distance fished (km)	3.04	3.04	2.99	2.90	2.89	2.94	2.81	2.89	2.89	2.98	2.86	2.83
Net width (m)	17.73	18.13	17.23	17.30	16.76	16.76	16.76	15.85	17.43	16.48	16.76	16.37
Net measured?	Y	Y	Y	Y	N	N	N	Y	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	15.7	7.9	2.8	12.2	2.2	11.9	8.4	5.8	2.7	41.8	4.9	496.3
Other skates	4.9	0.3										
Sharks												
Total elasmobranch	**11.7**	**8.0**	**2.8**	**12.2**	**2.2**	**11.9**	**8.4**	**5.8**	**2.7**	**41.8**	**4.9**	**496.3**
Alaska plaice		2.2	1.2		10.0	44.7	128.5	1.8	3.2	148.2		
Arrowtooth flounder	717.1	0.7									1.9	
Flathead sole	48.4	7.5			1.4	1.9	2.6	1.2	0.3	85.6	4.5	
Greenland turbot		0.2	0.5		0.4	0.5	0.9	0.6	0.3			
Pacific halibut	13.2		24.8	1.2	5.3	21.2	17.0	14.9	10.0	34.3	45.9	5.7
Rock sole	551.4	237.9	45.5	79.6	11.8	8.0	13.2	12.4	7.6	1342.6	13.1	698.5
Yellowfin sole		1.4	7.6	3.3	27.6	13.8	58.4	13.5	12.9	21.3	5.6	38.9
Other flatfish												
Total flatfish	**1398.4**	**242.2**	**79.1**	**93.5**	**55.2**	**88.6**	**21.2**	**51.4**	**6.9**	**1726.4**	**66.5**	**6458.2**
Walleye pollock	27.2	132.6	637.7	24.5	6.1	5.1	18.1	113.4	87.9	165.2	182.9	5.9
Pacific cod	259.5	32.4	336.7	673.8	21.8	28.9	39.7	95.8	28.3	1368.9	79.1	1247.1
Sablefish												
Atka mackerel												
Eelpouts	0.4					0.4		0.4	0.5			
Pacific herring				2.0								
Pacific ocean perch												
Sculpins	45.1	7.3	2.3	33.3	1.2	4.1	1.5	2.9	5.2	49.6	0.7	26.0
Other rockfish												
Other roundfish	2.1	1.5	3.8	2.9	1.4	2.4	7.6	5.2	2.8	6.4	7.8	17.9
Total roundfish	**577.3**	**182.7**	**98.6**	**914.3**	**29.2**	**4.8**	**66.9**	**217.2**	**124.7**	**1644.7**	**27.6**	**1341.6**
Blue king crab		2.9		25.5	0.5					0.5	7.0	
Red king crab										24.2		58.3
Tanner crab, bairdi	3.4	9.9	8.6	19.4	8.0	3.8	1.0	22.6	1.7	5.4	21.5	3.8
Tanner crab, opilio	18.6	44.0	122.3	57.2	3.9	53.7	8.7	32.1	28.8	13.8	2.7	0.8
Other crab	11.4	49.6	41.9	78.2	21.2	31.7	36.5	51.9	17.8	1.2	186.7	12.7
Shrimp	9.0	0.9	0.4	0.9	0.1			0.9	0.2		5.0	
Octopus												
Squids												
Snails	4.6	4.9		17.1		3.6	0.9	3.5	3.7		12.3	2.5
Starfish	68.7	68.2	28.8	98.2	20.0	97.9	52.8	128.2	93.1	295.5	5.9	24.2
Other invertebrates	20.0	17.6	62.1	1455.4	477.9	771.1	1279.7	422.2	142.5	128.7	476.7	526.4
Total invertebrates	**153.7**	**196.5**	**443.7**	**1751.7**	**557.6**	**96.4**	**1379.0**	**661.3**	**377.7**	**468.9**	**775.2**	**915.9**
Miscellaneous	11.5	15.0	15.8	42.8	5.6	22.9	47.6	47.1	87.6	1.2	288.5	68.3
Total catch	**2732.0**	**651.8**	**1542.0**	**2814.1**	**696.1**	**1126.0**	**1714.3**	**984.1**	**671.8**	**3968.0**	**141.0**	**928.0**

Appendix A Table 1. -- Continued.

Station	**G-21**	**GF2120**	**G-20**	**GF2019**	**F-20**	**F-18**	**G-18**	**H-18**	**I-18**	**H-21**	**H-22**	**M-20**
Start date and time	7/3/10 13:52	7/4/10 10:55	7/4/10 12:55	7/4/10 15:03	7/4/10 17:10	7/5/10 10:21	7/5/10 12:54	7/5/10 15:25	7/5/10 18:02	7/6/10 13:53	7/7/10 16:35	7/8/10 7:00
Haul number	109	114	115	116	117	118	119	120	121	122	123	124
Start latitude	5701.05	5650.71	5659.27	5650.71	5640.68	5638.72	5659.57	5719.21	5739.25	5719.60	5721.27	5859.97
Start longitude	17151.93	17004.90	17025.36	17042.35	17030.89	16942.59	16939.46	16937.91	16936.02	17145.63	17110.58	17011.19
End latitude	5700.28	5650.23	5700.31	5649.16	5639.77	5640.16	5701.19	5720.85	5740.78	5720.66	5721.43	5859.97
End longitude	17150.60	17006.67	17027.62	17041.61	17028.37	16942.41	16938.97	16938.08	16936.10	17147.63	17107.69	17008.10
Bottom depth (m)	67	72	61	80	80	107	81	74	71	56	84	64
Duration (h)	0.37	0.37	0.54	0.54	0.55	0.48	0.55	0.55	0.52	0.51	0.53	0.54
Distance fished (km)	1.97	2.02	3.02	2.97	3.08	2.67	3.04	3.05	2.85	2.82	2.94	2.98
Net width (m)	16.91	16.76	17.23	17.57	17.80	17.88	17.73	17.66	17.17	16.48	17.79	17.38
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	8.9	18.5	3.6	3.5	38.4	17.2	31.7	3.1	9.3	243.0	159.2	37.2
Other skates		5.3		6.4		2.7						
Sharks												
Total elasmobranch	**8.9**	**23.8**	**3.6**	**10.0**	**38.4**	**20.0**	**31.7**	**3.1**	**9.3**	**243.0**	**159.2**	**37.2**
Alaska plaice	4.4		19.6				4.8	9.3	22.8		7.4	422.9
Arrowtooth flounder	4.3	98.7		31.3	18.7	64.7	6.9			3.7	227.7	
Flathead sole	45.2	8.9	1.2	52.8	59.4	3.9	85.6	2.3	16.5		1244.4	5.8
Greenland turbot								0.2	0.9	0.3		0.9
Pacific halibut	19.4	52.9	8.3		19.2	3.4	24.0	12.4	5.3	7.8	23.5	
Rock sole	2738.9	482.2	2469.2	438.8	611.2	0.4	625.9	16.3	29.6	7244.7	126.5	
Yellowfin sole	416.2	4.1	13.3	4.4	2.6		4.5	9.2	1218.2	3.7		11.5
Other flatfish												
Total flatfish	**3219.3**	**638.0**	**251.4**	**474.5**	**651.6**	**67.9**	**666.2**	**47.1**	**1276.9**	**735.2**	**385.2**	**524.3**
Walleye pollock	527.6	471.2	24.6	166.6	194.0	447.8	7.9	62.6	97.9	21.6	934.2	
Pacific cod	1397.8	149.2	29.0	66.4	2.2	4.4	187.2	24.2	241.5	211.1	94.7	
Sablefish												
Atka mackerel												
Eelpouts											2.6	
Pacific herring												0.8
Pacific ocean perch												
Sculpins	448.7	9.7	23.3	142.2	315.3	12.7	19.9	3.7		214.3	57.0	3.3
Other rockfish												
Other roundfish	39.3	2.8	34.6	32.2	83.7	0.9	2.6	1.9	17.5	2.4	2.4	2.4
Total roundfish	**2412.0**	**713.9**	**471.3**	**137.0**	**69.3**	**51.9**	**388.7**	**91.6**	**357.0**	**449.4**	**19.4**	**5.9**
Blue king crab			6.2		5.5							
Red king crab	7.0	8.9	2.0	2.6					2.6	4.4		
Tanner crab, bairdi	214.7	92.5	18.0	3.7	6.6	4.8	29.4	1.8	3.1	0.6	5.1	3.7
Tanner crab, opilio	1.6	2.1	8.3	4.7	28.5	182.7	35.4	28.2	42.8		39.7	15.9
Other crab	4.2	18.2	6.7	123.5	55.4	14.8	16.3	27.7	16.3	0.9	4.1	32.6
Shrimp		0.5		0.4	0.2	0.3	0.4	0.4	0.3		0.5	
Octopus												
Squids												
Snails		24.8	194.1	1.6	45.4	26.8	1.4	0.2	38.1		9.9	76.2
Starfish	148.9	78.6	57.8	71.4	276.3	9.7	84.4	36.5	56.6	65.4	185.8	147.4
Other invertebrates	75.4	3.9	13.5	125.5	61.5	158.8	123.8	146.1	1495.7	37.4	46.7	115.4
Total invertebrates	**55.8**	**255.4**	**971.8**	**342.0**	**479.2**	**397.6**	**29.2**	**24.2**	**1744.7**	**648.7**	**642.8**	**1291.2**
Miscellaneous	1.2	14.6	151.2	96.6	36.4	9.8	2.7	1.4	63.0	1.7	8.5	21.0
Total catch	**6264.3**	**1726.0**	**4118.2**	**275.0**	**1874.0**	**2.0**	**1465.0**	**394.7**	**3466.1**	**8693.0**	**3530.0**	**1884.0**

Appendix A Table 1. -- Continued.

Station	**M-21**	**M-22**	**M-23**	**M-24**	**L-29**	**L-30**	**L-31**	**M-31**	**M-32**	**M-30**	**M-29**	**N-29**
Start date and time	7/8/10 9:40	7/8/10 12:10	7/8/10 14:42	7/8/10 17:19	7/9/10 7:19	7/9/10 10:06	7/9/10 12:48	7/9/10 15:59	7/9/10 18:56	7/10/10 7:23	7/10/10 10:10	7/10/10 13:15
Haul number	125	126	127	128	129	130	131	132	133	134	135	136
Start latitude	5859.98	5860.00	5859.98	5900.02	5839.96	5839.96	5839.93	5859.52	5900.07	5900.09	5859.98	5918.75
Start longitude	17132.20	17253.64	17214.65	17335.66	17629.36	17749.03	17711.18	17702.96	17825.58	17738.89	17614.71	17615.01
End latitude	5859.94	5900.05	5900.01	5859.98	5839.95	5839.91	5839.88	5901.24	5900.03	5900.07	5860.00	5919.97
End longitude	17129.13	17250.38	17211.62	17332.55	17626.13	17745.89	17708.02	17703.12	17822.42	17742.12	17617.96	17615.03
Bottom depth (m)	71	76	87	98	135	139	135	136	135	135	133	135
Duration (h)	0.53	0.56	0.53	0.55	0.56	0.56	0.56	0.58	0.57	0.57	0.57	0.42
Distance fished (km)	2.96	3.14	2.92	2.99	3.15	3.04	3.07	3.19	3.05	3.10	3.13	2.27
Net width (m)	18.13	18.66	18.33	18.28	18.22	18.17	18.26	18.33	18.83	18.01	18.44	17.66
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	7.1	2.3	25.7	43.9				19.3	8.1	1.3	11.8	89.5
Other skates				0.3		6.7			2.7		8.7	5.8
Sharks												
Total elasmobranch	**7.1**	**2.3**	**25.7**	**44.2**		**6.7**		**19.3**	**1.8**	**1.3**	**2.5**	**95.3**
Alaska plaice	44.1	1.2		2.5								
Arrowtooth flounder			2.5	23.1	265.9	3.0	8.8	179.5	143.5	32.8	21.7	176.8
Flathead sole	0.7	0.3	2.0	2.9	52.7	175.0	135.6	44.7	87.3	57.0	253.5	52.3
Greenland turbot	0.8	2.8	2.9	1.4	0.3						0.1	1.4
Pacific halibut	0.7	0.5	16.4	4.4			3.8	19.4	1.2	47.8	32.6	65.8
Rock sole			14.7	5.9	1.8			8.7	4.3		0.7	2.5
Yellowfin sole	2.2	1.4	0.6									
Other flatfish					7.5	25.8	10.0	0.6	4.2	3.7	0.4	
Total flatfish	**47.0**	**5.2**	**35.8**	**37.1**	**274.4**	**226.8**	**93.8**	**28.2**	**162.9**	**354.3**	**244.5**	**246.2**
Walleye pollock	0.3		975.6	883.2	0.4	0.2	0.9	0.3	0.8	394.7	45.6	2756.0
Pacific cod	0.2	0.2	28.1	16.4	22.0	17.3	2.3	51.4	5.0	22.8	44.9	77.4
Sablefish												
Atka mackerel												
Eelpouts	5.0	0.5	1.4	0.4	0.2					1.5		7.9
Pacific herring	0.1	0.8										
Pacific ocean perch							0.9					
Sculpins	0.5	0.2		47.7	0.3	1.0		4.4	3.3	0.2	14.7	2.3
Other rockfish												
Other roundfish	96.9	19.4	0.4	0.9	0.3		0.2	0.3	0.1		0.3	7.2
Total roundfish	**11.9**	**2.5**	**1257.2**	**191.5**	**22.4**	**17.4**	**2.7**	**56.8**	**9.2**	**3299.1**	**15.5**	**285.8**
Blue king crab			1.2									
Red king crab												
Tanner crab, bairdi	0.3	0.3	6.0	1.8	9.6	2.6	0.8	2.7	5.7	2.7	2.2	4.2
Tanner crab, opilio	52.3	16.5	16.8	71.2	0.6	4.0		0.2	2.0	0.3	2.0	1.5
Other crab	12.3	12.4	12.8	18.6	19.9	37.9	28.0	12.0	8.3	1.0	16.1	11.4
Shrimp	0.7	4.0	0.5	0.6	0.2	0.1	0.3	0.2	0.3	0.9	0.9	0.2
Octopus					0.1	0.5	0.5	0.1			0.3	
Squids												
Snails	93.3	65.1	53.5	43.7	6.6	17.9	9.7	9.2	11.3	3.6	17.8	22.0
Starfish	63.6	67.6	35.7	2.6	0.2	1.4	0.1	0.8	0.9	16.5	17.2	22.1
Other invertebrates	81.7	35.5	59.4	238.0	9.3	5.0	3.2	5.2	3.3	48.1	32.2	3.5
Total invertebrates	**33.3**	**287.2**	**269.2**	**393.2**	**45.7**	**64.8**	**41.9**	**74.4**	**56.8**	**98.7**	**85.7**	**289.7**
Miscellaneous	16.6	18.6	6.4	11.2	3.1	1.2	8.9	3.3	3.9	2.8	4.7	5.8
Total catch	**476.4**	**333.7**	**1596.0**	**1581.0**	**397.7**	**6.0**	**282.8**	**82.0**	**33.5**	**4326.0**	**713.8**	**3542.0**

Appendix A Table 1. -- Continued.

Station	**N-30**	**N-31**	**O-31**	**O-30**	**O-29**	**O-28**	**N-28**	**L-25**	**K-25**	**J-25**	**J-24**	**R-18**
Start date and time	7/10/10 16:10	7/10/10 18:54	7/11/10 7:21	7/11/10 10:06	7/11/10 12:43	7/11/10 15:44	7/11/10 18:29	7/12/10 7:13	7/12/10 10:17	7/12/10 12:58	7/12/10 15:40	7/30/10 14:25
Haul number	137	138	139	140	141	142	143	144	145	146	147	1
Start latitude	5920.00	5920.05	5939.69	5940.04	5940.05	5940.04	5920.88	5840.69	5820.78	5800.69	5759.95	6039.30
Start longitude	17738.27	17858.79	17852.38	17726.76	17606.41	17652.43	17654.15	17300.05	17304.34	17307.99	17342.36	16918.45
End latitude	5920.05	5920.01	5940.89	5940.05	5939.97	5939.95	5919.28	5839.23	5819.13	5758.98	5759.99	6040.75
End longitude	17735.01	17855.49	17850.24	17729.98	17609.56	17655.52	17654.25	17300.54	17304.74	17308.20	17344.48	16919.02
Bottom depth (m)	135	148	172	135	136	124	132	112	109	108	104	38
Duration (h)	0.56	0.58	0.55	0.55	0.55	0.54	0.56	0.51	0.56	0.58	0.40	0.50
Distance fished (km)	3.11	3.15	2.99	3.04	2.97	2.91	2.97	2.75	3.08	3.17	2.10	2.75
Net width (m)	17.88	18.28	18.17	17.79	17.86	18.02	18.16	17.44	17.44	18.31	17.24	14.28
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	2	0	0	0	0
Alaska skates	48.4	15.9	36.2	99.2	19.1	16.3	14.8	130.0	84.2	1.0	37.6	36.8
Other skates	9.7	1.4	42.3	5.3	5.3	2.4	5.4			5.0	2.6	
Sharks												
Total elasmobranch	**58.1**	**26.3**	**78.4**	**14.3**	**114.3**	**162.7**	**11.2**	**130.0**	**84.2**	**5.6**	**4.2**	**36.8**
Alaska plaice						3.2	6.9					39.2
Arrowtooth flounder	51.9	341.8	22.2	92.3	194.3	51.1	17.6	157.8	144.3	5.4	7.6	
Flathead sole	66.8	74.2	11.6	55.0	34.6	13.6	66.2	2.7	3.3	3.8	12.3	
Greenland turbot	0.4		40.0	18.3	21.4	3.1	0.1					
Pacific halibut	8.3	22.2	19.8	15.7	8.2	7.2	6.8	23.6	14.9			6.8
Rock sole	1.0	6.7				5.4	21.8		23.5	0.4		1.5
Yellowfin sole												416.3
Other flatfish												0.3
Total flatfish	**61.6**	**37.8**	**261.9**	**126.2**	**224.0**	**69.9**	**143.2**	**181.4**	**181.8**	**5.5**	**7.6**	**472.7**
Walleye pollock	1114.3	1736.7	133.6	542.4	197.8	529.6	584.3	8411.6	3882.6	276.8	1163.6	0.4
Pacific cod	63.5	32.2	9.9	21.6	27.9	5.1	15.1	311.5	236.4	24.5	19.9	0.2
Sablefish												
Atka mackerel												
Eelpouts	3.6		2.8	17.5	85.1	15.6	16.2	2.4			0.3	
Pacific herring												
Pacific ocean perch												
Sculpins	1.0	2.6	2.4	21.7	19.7	57.7	1.4		0.1		0.1	7.6
Other rockfish												
Other roundfish	0.2	0.3		0.6	2.4	1.2						0.5
Total roundfish	**1182.5**	**1789.9**	**148.5**	**792.9**	**242.8**	**652.9**	**616.6**	**8725.5**	**4119.2**	**31.2**	**1354.9**	**8.3**
Blue king crab							7.0					
Red king crab												
Tanner crab, bairdi	2.6	0.6	3.3	3.2	6.0	3.2	4.4	8.6	0.5	0.7	0.6	
Tanner crab, opilio	4.3	0.4	0.2	9.8	1.6	78.7	4.2	45.2	27.9	11.7	25.4	
Other crab	24.5	15.9	4.2	7.9	35.8	34.9	43.5	4.7	3.3	2.1	4.0	8.2
Shrimp	6.2	1.2	11.5	8.4	6.9	2.2	1.1		0.7		0.3	
Octopus	0.7			0.2								
Squids												
Snails	98.1	59.2	8.5	62.4	57.3	74.0	31.5	3.9	24.6	8.0	3.7	6.6
Starfish	656.0	15.3	1.7	453.2	268.5	3.8	69.8		0.3	0.8	8.2	59.0
Other invertebrates	18.9	36.7	3.7	18.9	114.1	18.8	2.8	8.0	16.7	13.9	86.5	1.4
Total invertebrates	**81.7**	**128.7**	**33.9**	**563.4**	**497.6**	**213.4**	**182.3**	**7.3**	**1.4**	**54.5**	**128.4**	**84.2**
Miscellaneous	12.4	4.4	1.5	12.4	12.7	9.5	15.5	1.0	7.6	6.3	0.6	7.3
Total catch	**2192.0**	**324.0**	**1524.0**	**1654.0**	**2926.0**	**1122.0**	**1134.0**	**911.9**	**4496.0**	**376.2**	**1544.1**	**69.3**

Appendix A Table 1. -- Continued.

Station	**S-18**	**T-18**	**U-18**	**V-18**	**W-18**	**X-18**	**Y-18**	**X-19**	**W-19**	**V-19**	**U-19**	**T-19**
Start date and time	7/30/10 16:55	7/30/10 19:31	7/31/10 7:15	7/31/10 9:50	7/31/10 12:18	7/31/10 14:43	7/31/10 18:17	8/1/10 7:15	8/1/10 9:44	8/1/10 12:12	8/1/10 14:48	8/1/10 17:12
Haul number	2	3	4	5	6	7	8	9	10	11	12	13
Start latitude	6058.98	6119.09	6139.18	6159.22	6219.14	6239.33	6256.23	6240.56	6220.84	6200.98	6140.40	6120.90
Start longitude	16916.10	16913.98	16911.90	16909.60	16907.65	16905.74	16900.84	17025.40	17024.22	17027.12	17029.71	17032.31
End latitude	6100.47	6120.57	6140.66	6200.72	6220.62	6240.76	6254.87	6239.67	6219.37	6159.53	6138.95	6119.85
End longitude	16915.70	16913.88	16911.76	16909.48	16907.90	16906.80	17059.22	17022.85	17024.23	17027.06	17030.16	17032.19
Bottom depth (m)	37	34	37	37	35	37	29	40	37	42	42	41
Duration (h)	0.51	0.50	0.50	0.50	0.50	0.50	0.51	0.50	0.50	0.48	0.49	0.35
Distance fished (km)	2.79	2.74	2.74	2.78	2.78	2.80	2.87	2.74	2.73	2.70	2.73	1.96
Net width (m)	14.76	14.94	13.99	14.65	14.23	14.81	14.94	14.94	14.94	14.03	14.94	13.97
Net measured?	Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	126.4	14.5	7.6	23.7	1.2	14.3	32.6	9.3	9.1	14.4	1.1	
Other skates	0.2											
Sharks												
Total elasmobranch	**126.2**	**14.5**	**7.6**	**23.7**	**1.2**	**14.3**	**32.6**	**9.3**	**9.1**	**14.4**	**1.1**	
Alaska plaice	77.2	31.9	73.6	135.7	114.7	16.7	365.2	168.7	264.4	27.7	61.3	6.0
Arrowtooth flounder												
Flathead sole	0.2	2.4	1.7	0.2	0.3	0.8	0.2	1.4	5.4	1.8	0.5	0.4
Greenland turbot									4.0			
Pacific halibut												
Rock sole	23.4	14.4	33.2	6.0	0.8	3.6	4.0	0.7		1.4	0.3	5.2
Yellowfin sole	576.5	195.8	378.5	138.2	72.5	118.1	422.4	61.5	122.4	88.3	57.6	98.5
Other flatfish	0.1	0.9	0.5	0.2	0.3	0.8	25.4	0.7	1.2	0.3	0.3	0.7
Total flatfish	**676.6**	**242.1**	**484.8**	**28.2**	**188.4**	**229.3**	**816.9**	**231.6**	**387.6**	**297.7**	**118.7**	**154.3**
Walleye pollock	55.2	9.4	16.8	9.3		0.1			2.3	8.0	0.2	3.7
Pacific cod	25.9		3.2							0.2		3.6
Sablefish												
Atka mackerel												
Eelpouts												
Pacific herring					0.1					0.2	0.2	
Pacific ocean perch												
Sculpins	7.6	3.6	56.4	8.4	0.9	9.2	7.7	2.7	0.3	3.2	5.6	5.7
Other rockfish												
Other roundfish	1.3	34.9	1.5	2.3	5.5	0.9	18.8	2.5	29.0	9.5	0.7	0.2
Total roundfish	**90.0**	**47.9**	**78.0**	**20.0**	**6.0**	**1.1**	**26.4**	**5.2**	**31.5**	**13.2**	**6.6**	**13.2**
Blue king crab												
Red king crab												
Tanner crab, bairdi												
Tanner crab, opilio	0.1	0.1	7.4	13.1	75.3	14.5	3.3	178.0	16.6	146.3	84.6	96.3
Other crab	2.6	68.4	11.4	52.5	11.3	33.5	197.0	48.8	35.7	13.0	9.4	3.6
Shrimp				8.0	0.2	0.2	0.3	0.2	0.3	2.0		
Octopus												
Squids												
Snails	12.9	145.1	124.5	72.6	18.2	5.2	24.0	91.7	52.1	15.2	11.8	95.7
Starfish	127.2	135.5	489.6	89.4	63.7	34.6	5.0	3.5	6.1	24.4	219.1	8.0
Other invertebrates	23.2	54.2	235.1	31.2	43.5	16.7	0.5	4.5	23.2	9.1	145.6	151.9
Total invertebrates	**184.0**	**43.3**	**12.7**	**258.7**	**212.4**	**275.7**	**229.9**	**318.7**	**133.5**	**27.4**	**47.1**	**445.5**
Miscellaneous	35.4	86.2	117.4	38.8	2.0	28.8	9.8	29.8	36.8	8.7	3.8	23.3
Total catch	**1112.2**	**796.1**	**1712.0**	**621.5**	**427.9**	**559.2**	**1116.0**	**596.2**	**63.9**	**543.9**	**6.7**	**636.6**

Appendix A Table 1. -- Continued.

Station	**S-19**	**R-19**	**R-20**	**R-21**	**S-21**	**S-20**	**T-20**	**T-21**	**T-22**	**U-22**	**U-21**	**V-21**
Start date and time	8/2/10 7:22	8/2/10 10:05	8/2/10 12:31	8/2/10 15:11	8/2/10 17:47	8/3/10 7:28	8/3/10 10:00	8/3/10 12:27	8/3/10 15:08	8/3/10 17:33	8/4/10 7:38	8/4/10 10:13
Haul number	14	15	16	17	18	19	20	21	22	23	24	25
Start latitude	6100.67	6040.06	6040.08	6039.21	6059.89	6058.87	6119.53	6120.28	6119.85	6139.48	6139.58	6159.67
Start longitude	17034.23	17038.59	17157.92	17114.73	17109.31	17154.48	17154.08	17113.56	17230.64	17227.67	17108.24	17102.70
End latitude	6059.23	6040.42	6040.28	6040.73	6100.12	6100.21	6120.77	6120.45	6121.15	6140.77	6141.08	6200.81
End longitude	17034.90	17035.68	17154.92	17114.51	17112.24	17153.14	17152.30	17110.47	17229.24	17226.31	17107.82	17100.65
Bottom depth (m)	42	43	50	62	54	48	47	41	55	55	50	49
Duration (h)	0.50	0.49	0.50	0.51	0.49	0.50	0.51	0.50	0.50	0.49	0.51	0.50
Distance fished (km)	2.74	2.74	2.78	2.83	2.69	2.77	2.81	2.78	2.73	2.70	2.81	2.78
Net width (m)	14.84	14.71	16.17	17.59	15.98	16.36	16.68	15.64	17.41	16.17	15.42	16.17
Net measured?	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	N
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	1.7	13.4	13.3	5.3	1.4	18.2	5.5	1.6	11.2	2.9	9.6	1.8
Other skates			0.7									
Sharks												
Total elasmobranch	**1.7**	**13.4**	**13.4**	**5.3**	**1.4**	**18.2**	**5.5**	**1.6**	**11.2**	**2.9**	**9.6**	**1.8**
Alaska plaice	19.6	13.5	74.2	77.1	174.9	175.1	89.9	922.7	234.9	11.4	212.6	65.3
Arrowtooth flounder												
Flathead sole	0.8	0.5	4.5	1.0	2.7	4.7	8.6	5.6	2.0	3.1	5.2	5.3
Greenland turbot										0.2		0.6
Pacific halibut								1.3				0.7
Rock sole		1.6					0.4					
Yellowfin sole	391.2	319.4	37.6	2.9	77.5	24.4	188.7	493.1	89.9	21.6	88.7	7.4
Other flatfish		0.2	0.3			0.5	0.1		1.2	0.6	1.3	0.2
Total flatfish	**5.6**	**451.2**	**111.3**	**98.4**	**252.4**	**415.6**	**279.1**	**1417.3**	**325.8**	**123.2**	**32.6**	**136.7**
Walleye pollock	12.5	3.1	2.8	8.0		6.3				0.5	1.0	0.4
Pacific cod	11.6	4.5										0.5
Sablefish												
Atka mackerel												
Eelpouts			0.4	1.4	6.7	0.7	2.7	5.5	14.2	11.7	6.7	2.4
Pacific herring			1.0	0.5								
Pacific ocean perch												
Sculpins	9.6	12.0	1.5			6.4	2.5		1.0	0.1	0.8	0.1
Other rockfish												
Other roundfish	1.7	0.5	1.6	19.8	19.1	4.5	9.8	6.7	6.8	7.3	27.3	5.9
Total roundfish	**35.3**	**3.0**	**6.4**	**21.3**	**25.8**	**18.0**	**15.0**	**12.2**	**21.6**	**18.9**	**34.9**	**8.7**
Blue king crab												
Red king crab	1.6		0.9									
Tanner crab, bairdi												
Tanner crab, opilio	62.6	2.2	7.9	14.9	13.9	11.6	144.4	55.6	23.3	14.9	185.7	126.3
Other crab	7.5	4.2	25.8	8.2	18.0	23.7	35.3	52.2	18.8	0.2	31.6	34.9
Shrimp				0.1		8.0			6.0			
Octopus												
Squids												
Snails	32.4	22.2	14.2	2.9	2.8	1.4	8.5	2.4	15.5		18.8	22.0
Starfish	38.2	115.2	97.9	28.9	26.9	11.5	15.3	6.9	1.8	39.1	12.2	22.9
Other invertebrates	525.8	82.5	153.3	13.6	38.7	139.7	35.4	158.2	36.5	6.2	68.7	21.4
Total invertebrates	**668.5**	**262.4**	**363.6**	**194.5**	**189.3**	**287.0**	**238.8**	**769.6**	**95.4**	**15.5**	**317.0**	**227.2**
Miscellaneous	73.2	64.7	16.2	1.1	0.5	9.1	6.6	19.1	0.9		5.4	2.9
Total catch	**1288.3**	**811.8**	**514.7**	**321.3**	**481.8**	**752.4**	**553.0**	**2234.0**	**456.5**	**335.4**	**674.6**	**382.7**

Appendix A Table 1. -- Continued.

Station	**V-22**	**V-23**	**W-23**	**W-22**	**X-22**	**Y-22**	**ZZ-22**	**ZZ-21**	**Y-21**	**Y-20**	**X-20**	**X-21**
Start date and time	8/4/10 12:42	8/4/10 15:22	8/4/10 17:52	8/5/10 7:34	8/5/10 10:02	8/5/10 12:23	8/5/10 14:47	8/5/10 18:28	8/6/10 7:30	8/6/10 10:59	8/6/10 13:17	8/6/10 15:46
Haul number	26	27	28	29	30	31	32	33	34	35	36	37
Start latitude	6159.79	6158.57	6219.31	6219.68	6239.24	6258.50	6318.49	6316.84	6259.88	6257.12	6240.66	6239.19
Start longitude	17221.35	17337.87	17335.94	17215.13	17211.27	17212.12	17201.45	17250.85	17250.76	17129.60	17139.54	17255.05
End latitude	6159.73	6200.02	6220.71	6221.23	6240.78	6300.03	6319.12	6316.17	6259.75	6256.66	6239.74	6240.76
End longitude	17218.20	17338.06	17336.94	17215.45	17210.96	17212.17	17201.23	17251.40	17254.21	17132.99	17136.66	17254.74
Bottom depth (m)	52	56	54	47	49	53	61	33	47	42	43	45
Duration (h)	0.50	0.49	0.50	0.52	0.51	0.51	0.21	0.24	0.52	0.53	0.53	0.53
Distance fished (km)	2.77	2.71	2.75	2.90	2.85	2.84	1.20	1.33	2.94	3.00	3.01	2.94
Net width (m)	16.03	16.27	16.26	16.95	17.61	17.21	17.26	15.90	16.17	17.31	16.17	17.64
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y
Performance	0	0	0	0	0	0	1	2	0	0	0	0
Alaska skates	6.4	4.3	3.7	14.7	18.5	8.3	5.7		1.4	32.3	2.6	32.7
Other skates												
Sharks												
Total elasmobranch	**6.4**	**4.3**	**3.7**	**14.7**	**18.5**	**8.3**	**5.7**		**1.4**	**32.3**	**2.6**	**32.7**
Alaska plaice	61.4	65.7	6.5	24.9	94.6	42.4	37.2	2.5	261.3	56.9	236.6	137.5
Arrowtooth flounder												
Flathead sole	7.4	21.9	19.5	16.3	17.2	5.5	0.1		9.8	13.5	3.5	6.0
Greenland turbot		8.0	0.5									
Pacific halibut	0.8						2.1		1.4			
Rock sole	1.3			1.1			0.6				0.3	
Yellowfin sole	7.9	2.4	1.2	57.3	8.4	5.5	0.8		18.6	97.9	51.1	29.4
Other flatfish	0.8	2.3	9.0	4.2	1.3	0.2	0.3		6.8	4.6	1.5	1.4
Total flatfish	**72.2**	**7.3**	**7.7**	**33.3**	**14.4**	**48.1**	**4.9**	**2.5**	**288.8**	**69.3**	**288.6**	**167.9**
Walleye pollock		0.3	0.9		0.1	0.1			6.0		2.4	3.8
Pacific cod					0.3		9.2		9.4			0.8
Sablefish												
Atka mackerel												
Eelpouts	12.7	39.1	17.2	22.7	2.8	6.5	0.3	0.5	1.1			1.3
Pacific herring		3.2		0.2	6.0	49.6	0.2		1.5	2.2	14.5	
Pacific ocean perch												
Sculpins	2.7	0.9	0.6	0.7	0.9	1.0	1.9	3.1	5.9	33.5	3.5	2.2
Other rockfish												
Other roundfish	8.8	7.0	12.2	20.0	2.5	5.5	3.3	0.3	1.7	13.5	17.4	2.7
Total roundfish	**22.8**	**49.7**	**3.8**	**43.4**	**23.8**	**61.9**	**13.8**	**3.4**	**19.6**	**139.1**	**37.4**	**9.3**
Blue king crab												
Red king crab												
Tanner crab, bairdi												
Tanner crab, opilio	232.8	8.1	49.0	16.8	68.4	15.4	3.5	0.4	59.9	12.7	1.4	15.6
Other crab	61.8	16.2	32.0	47.9	36.6	6.7	66.7	2.8	25.4	16.8	14.0	35.9
Shrimp		2.0	0.4	0.1	0.2	4.2	8.2	0.8	0.4	0.3	1.5	2.4
Octopus								0.2				
Squids												
Snails	79.7	53.9	142.5	17.0	18.0	114.9	85.2	14.5	22.4	3.4	13.8	45.6
Starfish	48.4	14.4	22.9	11.8	27.5	32.8	15.9	5.3	1.0	0.3	1.2	8.2
Other invertebrates	25.4	13.1	31.7	18.3	51.4	1.5	19.5	89.5	1.7	2.0	5.2	8.0
Total invertebrates	**448.1**	**177.8**	**277.7**	**291.8**	**292.8**	**319.3**	**199.2**	**112.8**	**11.7**	**35.4**	**37.0**	**114.7**
Miscellaneous	0.1	1.5	27.6	21.4	15.9	7.9	3.5	4.4	0.2	0.2	1.2	6.2
Total catch	**557.5**	**325.6**	**43.1**	**69.6**	**471.4**	**45.6**	**263.1**	**122.2**	**429.8**	**829.8**	**37.3**	**336.7**

Appendix A Table 1. -- Continued.

Station	**W-21**	**W-20**	**V-20**	**U-20**	**U-03**	**T-03**	**S-03**	**R-03**
Start date and time	8/6/10 18:27	8/7/10 7:31	8/7/10 10:03	8/7/10 12:39	8/8/10 7:33	8/8/10 10:59	8/8/10 15:18	8/8/10 17:58
Haul number	38	39	40	41	42	43	44	45
Start latitude	6221.31	6221.15	6200.76	6140.29	6139.53	6121.36	6101.05	6040.30
Start longitude	17257.15	17142.89	17144.58	17147.39	16715.63	16705.64	16719.58	16718.27
End latitude	6219.97	6219.64	6159.19	6140.20	6138.06	6120.70	6059.50	6039.46
End longitude	17258.95	17143.05	17144.62	17150.67	16717.25	16708.69	16720.65	16721.13
Bottom depth (m)	43	40	47	46	20	20	19	21
Duration (h)	0.53	0.51	0.52	0.52	0.54	0.54	0.54	0.53
Distance fished (km)	2.93	2.80	2.91	2.91	3.08	2.99	3.05	3.05
Net width (m)	16.85	16.38	17.42	17.15	14.88	15.30	16.04	15.44
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0
Alaska skates	5.1	4.4	1.2	3.5	35.0	27.6	7.4	57.4
Other skates								
Sharks								
Total elasmobranch	**5.1**	**4.4**	**1.2**	**3.5**	**35.0**	**27.6**	**7.4**	**57.4**
Alaska plaice	35.0	29.9	112.5	111.7	2.3	48.5	8.6	3.5
Arrowtooth flounder								
Flathead sole	2.0	8.8	3.2	2.0				
Greenland turbot								
Pacific halibut			3.7	1.7	14.2	46.2	15.3	96.3
Rock sole			0.3					7.9
Yellowfin sole	128.4	113.4	67.6	88.3	51.7	762.7	33.9	312.9
Other flatfish	5.6	6.6	0.1	0.1	0.2	1.4	0.6	5.3
Total flatfish	**474.9**	**42.0**	**183.9**	**21.9**	**536.4**	**858.7**	**355.5**	**425.9**
Walleye pollock	0.4	3.5		0.2	4.7	4.6		0.2
Pacific cod		3.0	0.2		5.6	4.2		
Sablefish								
Atka mackerel								
Eelpouts	1.8	0.2		0.8				
Pacific herring		15.6			0.7	9.6	2.9	1.7
Pacific ocean perch								
Sculpins	0.7	0.8	0.6		19.4	21.2	0.4	12.8
Other rockfish								
Other roundfish	9.3	6.5	2.8	3.4	69.2	58.2	37.8	156.3
Total roundfish	**11.8**	**83.7**	**21.6**	**4.2**	**99.5**	**97.8**	**41.8**	**17.8**
Blue king crab								
Red king crab								
Tanner crab, bairdi								
Tanner crab, opilio	25.9	1.9	89.8	126.6	1.5	0.4		
Other crab	36.5	23.2	3.5	2.4	1.7	3.6	0.8	
Shrimp	0.2	0.8	6.0				0.7	0.2
Octopus								
Squids								
Snails	28.1	74.8	4.3	11.7	0.2	0.8		
Starfish	6.4	4.9	10.0	15.9	79.9	89.2	24.3	37.2
Other invertebrates	4.3	79.4	46.8	226.6	2.4	0.7	0.7	1.3
Total invertebrates	**137.5**	**183.3**	**181.4**	**4.5**	**94.7**	**93.6**	**25.9**	**38.3**
Miscellaneous	2.7	23.2	3.5	1.5	1.8	0.4	0.2	0.3
Total catch	**687.4**	**714.3**	**43.5**	**622.4**	**767.2**	**178.0**	**430.0**	**692.5**

Appendix A Table 2. -- Haul and catch data for successfully completed tows by FV *Alaska Knight* during the 2010 eastern and northern Bering Sea bottom trawl survey.

Station	**G-15**	**H-15**	**I-15**	**K-13**	**J-13**	**I-13**	**H-13**	**G-13**	**E-12**	**E-11**	**F-11**
Start date and time	6/7/10 9:51	6/7/10 13:19	6/7/10 16:22	6/8/10 6:36	6/8/10 9:24	6/8/10 12:31	6/8/10 15:32	6/8/10 18:27	6/9/10 6:32	6/9/10 10:07	6/9/10 13:50
Haul number	5	6	7	8	9	10	11	12	13	14	15
Start latitude	5700.82	5718.60	5739.00	5816.92	5800.52	5741.12	5719.96	5700.10	5619.68	5619.00	5638.99
Start longitude	16051.60	16055.99	16058.03	16001.84	16148.64	16144.36	16141.79	16140.50	16259.42	16221.64	16224.27
End latitude	5702.26	5719.97	5740.23	5815.38	5759.58	5739.73	5718.56	5658.64	5620.72	5620.20	5639.43
End longitude	16051.19	16054.93	16059.68	16001.52	16146.51	16143.27	16140.61	16140.00	16101.31	16223.17	16226.69
Bottom depth (m)	35	48	46	41	51	53	61	62	54	65	89
Duration (h)	0.49	0.51	0.52	0.52	0.51	0.50	0.51	0.51	0.50	0.51	0.48
Distance fished (km)	2.70	2.75	2.81	2.87	2.74	2.79	2.85	2.76	2.74	2.74	2.61
Net width (m)	14.47	16.35	16.31	15.85	16.40	15.75	15.92	16.24	16.35	16.08	14.04
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	343.78	8.16	19.98	3.26	51.90	3.04	1.87	28.78	33.58	11.08	1.58
Other skates											
Sharks											
Total elasmobranch	**343.8**	**8.2**	**20.0**	**3.3**	**51.9**	**3.0**	**1.9**	**28.8**	**33.6**	**11.1**	**1.6**
Alaska plaice		0.2		41.5	26.7	6.3	0.6	0.6	140.7	75.5	172.9
Arrowtooth flounder							3.4	2.4	0.5	47.3	
Flathead sole	5.4	1.6	0.6	3.6	4.4	17.5	8.9	8.9	5.9	16.1	136.8
Greenland turbot											
Pacific halibut	23.3	22.8	13.8	0.5	35.3	41.8	22.2	36.0	13.8	15.0	23.2
Rock sole	1,619.0	303.7	192.8	1,286.4	938.2	548.4	1,297.3	343.3	416.2	1,273.5	248.5
Yellowfin sole	325.9	97.2	149.7	892.2	1,069.3	92.2	131.1	104.4	4,272.8	237.2	269.9
Other flatfish	85.7	6.5	11.5	61.1	27.0	10.7		7.6	3.2	483.9	
Total flatfish	**2,053.9**	**430.3**	**367.8**	**2,281.7**	**2,096.4**	**699.6**	**1,454.6**	**494.2**	**4,847.1**	**2,132.4**	**714.4**
Walleye pollock	77.6	28.8	2.3		56.0	14.4	66.2	86.6	63.7	44.4	357.7
Pacific cod	297.6	127.5	38.3	3.7	50.9	55.6	100.4	41.1	124.2	161.1	17.4
Sablefish											
Atka mackerel											
Eelpouts											
Pacific herring		42.3	11.5	6.9			2.9				
Pacific ocean perch											
Sculpins	16.6	6.1	20.1	129.3	14.3	2.8	65.1	7.2	28.9	66.3	4.9
Other rockfish											
Other roundfish	4.2	2.6	2.7	5.8	4.1	2.3	6.1	2.2	7.9	4.9	9.7
Total roundfish	**396.0**	**207.4**	**74.9**	**145.6**	**125.3**	**75.0**	**240.6**	**137.2**	**224.7**	**276.7**	**389.6**
Blue king crab											
Red king crab	0.8	4.5	0.4		37.8	84.4	54.0	70.9	44.9	311.9	6.7
Tanner crab, bairdi						0.2		0.3	2.1	1.8	7.2
Tanner crab, opilio											
Other crab	2.9	3.5	0.6	2.2	0.5	3.8	8.3	5.6	125.5	1.0	19.7
Shrimp		0.0		0.0	0.0		0.0	0.0			0.2
Octopus											
Squids											
Snails		0.5	0.1		3.3	4.2	1.4	0.3	12.9		
Starfish	150.0	307.0	153.6	48.0	408.4	349.6	415.7	149.3	139.4	34.3	
Other invertebrates	30.8	13.2	33.4	2.1	14.4	134.9	144.6	77.8	22.0	64.1	2,235.9
Total invertebrates	**184.5**	**328.8**	**188.0**	**52.4**	**464.4**	**577.1**	**624.0**	**304.2**	**346.8**	**413.1**	**2,269.6**
Miscellaneous	2.4	3.4	0.6	0.1	1.6	1.8	2.1	0.7	15.8	0.5	
Total catch	**2,986.0**	**979.6**	**651.9**	**2,540.0**	**2,744.0**	**1,374.0**	**2,332.0**	**974.0**	**5,474.0**	**2,850.0**	**3,512.0**

Appendix A Table 2. -- Continued.

Station	**G-11**	**H-11**	**I-11**	**I-10**	**J-10**	**J-11**	**L-09**	**K-09**	**J-09**	**I-09**	**H-09**
Start date and time	6/9/10 16:55	6/10/10 6:24	6/10/10 9:12	6/10/10 12:07	6/10/10 15:20	6/10/10 19:33	6/11/10 6:18	6/11/10 9:08	6/11/10 11:56	6/11/10 14:33	6/11/10 17:30
Haul number	16	17	18	19	20	22	23	24	25	26	27
Start latitude	5658.56	5718.93	5738.43	5738.69	5758.44	5800.15	5840.68	5821.20	5801.19	5741.12	5720.49
Start longitude	16225.06	16228.86	16230.79	16351.38	16352.05	16231.06	16317.27	16317.33	16315.16	16314.81	16314.58
End latitude	5659.89	5720.32	5739.41	5739.31	5758.79	5759.15	5839.24	5819.70	5759.74	5739.70	5719.05
End longitude	16226.24	16228.17	16228.79	16348.72	16349.29	16231.10	16318.35	16316.75	16314.57	16314.52	16314.62
Bottom depth (m)	67	57	54	46	36	54	22	32	40	43	48
Duration (h)	0.49	0.49	0.50	0.52	0.50	0.34	0.53	0.51	0.51	0.49	0.50
Distance fished (km)	2.74	2.68	2.70	2.90	2.81	1.86	2.89	2.85	2.76	2.64	2.68
Net width (m)	16.96	16.10	16.14	15.92	15.69	16.38	15.32	15.62	15.45	15.32	16.35
Net measured?	N	Y	Y	Y	Y	Y	N	Y	Y	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	10.7	14.3	43.6	31.4	48.6	14.3	33.1	109.4	43.3	3.5	24.2
Other skates											
Sharks											
Total elasmobranch	**10.7**	**14.3**	**43.6**	**31.4**	**48.6**	**14.3**	**33.1**	**109.4**	**43.3**	**3.5**	**24.2**
Alaska plaice	183.3	53.7	115.5	143.2	8.1	30.8	0.5	34.0	66.4	35.8	77.7
Arrowtooth flounder		1.4									0.3
Flathead sole	37.6	19.0	32.3	18.1	4.7				12.4	7.8	5.4
Greenland turbot											
Pacific halibut	20.4	25.8	41.1	46.6	241.6	12.8	33.7	69.4	194.3	34.9	43.5
Rock sole	203.4	356.7	342.8	500.6	681.7	466.3	678.0	1,918.5	517.6	690.7	474.8
Yellowfin sole	301.3	279.4	580.7	734.9	314.3	659.1	311.2	790.3	257.1	1,730.6	137.5
Other flatfish	1.7	1.7		6.3	9.5	4.0	391.9	114.9	7.4	11.9	
Total flatfish	**710.1**	**718.8**	**1,080.1**	**1,431.6**	**1,255.2**	**1,173.0**	**1,415.3**	**2,927.2**	**1,042.8**	**2,504.0**	**733.7**
Walleye pollock	57.7	16.5	19.3					5.8	0.0		10.5
Pacific cod	7.1	42.4	82.0	25.5	29.6	168.7	156.0	86.4	348.0	10.6	168.1
Sablefish											
Atka mackerel											
Eelpouts											
Pacific herring							0.1				
Pacific ocean perch											
Sculpins	25.3	0.4	6.3	26.8	19.2	11.1	7.1	18.6	59.9	64.2	18.4
Other rockfish											
Other roundfish	1.4	3.2	2.3	2.0	0.6	2.4	2.7	1.1	0.7	0.2	1.7
Total roundfish	**91.5**	**62.4**	**109.9**	**54.3**	**49.4**	**182.3**	**165.9**	**111.9**	**408.7**	**75.0**	**198.7**
Blue king crab											
Red king crab	31.5	46.4	75.5	55.6	20.9	27.3	3.7		17.6	18.4	5.9
Tanner crab, bairdi	0.7	0.6									
Tanner crab, opilio	0.3										
Other crab	2.6	10.8	3.4	4.9	13.7	5.1	1.1	48.7	10.7	2.2	10.7
Shrimp	0.0	0.0	0.0		0.0	0.0					0.0
Octopus											
Squids											
Snails		4.8	6.2	2.6	18.3	4.2		14.2	5.8	1.6	8.7
Starfish	12.9	93.2	90.8	468.9	87.3	237.8	39.6	182.5	389.2	101.7	113.2
Other invertebrates	118.6	273.0	93.7	67.9	0.8	49.8	0.7	0.1	3.6	1.9	44.2
Total invertebrates	**166.6**	**428.9**	**269.6**	**599.9**	**141.0**	**324.2**	**45.1**	**245.5**	**426.9**	**125.8**	**182.7**
Miscellaneous	0.2	3.3	2.5	0.7	2.1	4.4	0.7	12.1	2.0		1.2
Total catch	**1,016.7**	**1,246.6**	**1,537.9**	**2,136.0**	**1,501.0**	**1,698.0**	**1,660.0**	**3,406.0**	**1,936.0**	**2,716.0**	**1,146.0**

Appendix A Table 2. -- Continued.

Station	**G-09**	**F-09**	**E-09**	**D-09**	**C-09**	**B-07**	**C-07**	**D-07**	**E-07**	**F-07**	**G-07**
Start date and time	6/12/10 6:29	6/12/10 9:08	6/12/10 11:49	6/12/10 14:32	6/12/10 17:22	6/13/10 6:31	6/13/10 9:13	6/13/10 12:05	6/13/10 15:03	6/13/10 17:48	6/14/10 6:33
Haul number	28	29	30	31	32	33	34	35	36	37	38
Start latitude	5700.91	5641.46	5620.64	5600.25	5540.48	5520.45	5540.51	5559.11	5619.19	5638.73	5658.53
Start longitude	16312.28	16312.47	16312.26	16311.63	16311.53	16558.34	16400.73	16558.00	16402.16	16559.72	16557.29
End latitude	5659.47	5639.97	5619.12	5558.14	5539.67	5521.84	5542.01	5600.55	5620.64	5640.24	5659.97
End longitude	16313.06	16312.45	16312.14	16311.68	16309.39	16559.22	16400.11	16557.47	16401.56	16559.31	16556.97
Bottom depth (m)	61	71	77	78	51	80	95	90	85	74	69
Duration (h)	0.51	0.50	0.51	0.72	0.50	0.51	0.53	0.51	0.50	0.52	0.50
Distance fished (km)	2.80	2.77	2.82	3.93	2.70	2.75	2.84	2.72	2.77	2.82	2.69
Net width (m)	16.61	16.75	16.65	16.79	16.16	16.77	17.28	17.65	17.36	16.90	16.33
Net measured?	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	18.3	3.9	6.0	10.1	20.6	34.9	28.8	5.7	10.5	35.4	52.9
Other skates									4.4		
Sharks											
Total elasmobranch	**18.3**	**3.9**	**6.0**	**10.1**	**20.6**	**34.9**	**28.8**	**5.7**	**14.9**	**35.4**	**52.9**
Alaska plaice	127.3	29.5	23.9	263.8	10.6			15.3	20.4	32.8	17.4
Arrowtooth flounder			2.7	42.0	43.0	736.6	45.7	131.3	38.7		
Flathead sole	15.8	7.0	207.0	45.0	22.0	41.8	50.3	132.8	349.9	49.9	17.7
Greenland turbot											0.0
Pacific halibut	20.3	1.1	98.4	46.7	14.5	33.6	6.0	17.2	33.8	18.5	15.6
Rock sole	276.5	21.7	170.3	193.6	411.9	313.0	270.1	554.1	483.0	155.9	98.9
Yellowfin sole	130.7	283.5	492.7	396.3	223.3	94.6	16.5	54.7	237.4	269.1	162.8
Other flatfish				0.7	4.0		0.2	2.5			
Total flatfish	**554.8**	**335.8**	**788.0**	**943.1**	**707.3**	**1,177.7**	**338.5**	**775.0**	**813.3**	**476.2**	**294.8**
Walleye pollock	9.4	0.2	4.0	41.3	95.0	925.3	14.4	18.1	179.9	16.3	0.2
Pacific cod	8.4	0.8	92.1	85.0	37.7	51.9	110.3	97.6	321.1	51.0	8.3
Sablefish											
Atka mackerel											
Eelpouts										1.3	0.8
Pacific herring										0.1	
Pacific ocean perch											
Sculpins	2.7	1.2	3.9	8.8	7.0	9.2	3.8	1.5	1.7	7.1	1.7
Other rockfish											
Other roundfish	2.9	0.4	1.9	3.4	5.7	19.5	0.8	2.1	1.0	1.2	0.1
Total roundfish	**23.4**	**2.6**	**101.8**	**138.5**	**145.4**	**1,006.0**	**129.3**	**119.3**	**503.6**	**76.9**	**11.1**
Blue king crab											
Red king crab	2.9			10.8	112.7			3.9			
Tanner crab, bairdi	0.7	5.8	9.1	30.8	24.0	3.8	51.4	8.0	7.8	14.5	1.5
Tanner crab, opilio		2.2	1.3	0.5	0.6	6.1	8.2	1.3	3.7	0.2	0.7
Other crab	8.1	23.0	4.7	1.8	1.4	0.6	113.6	64.4	67.1	21.8	23.5
Shrimp	0.0	0.2					0.0			0.0	0.1
Octopus											
Squids											
Snails	16.7	37.0	8.2	15.4	9.9	11.7	168.5	90.2	137.8	43.5	47.6
Starfish	93.8	38.6	0.4	0.1	111.4	1.4	1.9	0.8	1.2	23.0	26.9
Other invertebrates	92.2	161.2	95.3	48.8	25.9	72.2	362.9	1,234.6	208.2	154.0	207.8
Total invertebrates	**214.3**	**268.0**	**119.1**	**108.2**	**285.9**	**95.8**	**706.4**	**1,403.1**	**425.8**	**257.2**	**308.1**
Miscellaneous	2.1	16.0	1.0	0.6	0.9	1.7	80.6	46.1	130.6	44.7	0.1
Total catch	**828.7**	**633.3**	**1,222.9**	**1,245.4**	**1,182.1**	**2,358.0**	**1,334.0**	**2,482.0**	**2,238.0**	**940.3**	**685.3**

Appendix A Table 2. -- Continued.

Station	**H-07**	**I-07**	**J-07**	**K-07**	**N-05**	**M-05**	**L-05**	**K-05**	**J-05**	**I-05**	**H-05**
Start date and time	6/14/10 9:14	6/14/10 11:48	6/14/10 14:32	6/14/10 17:17	6/15/10 6:24	6/15/10 9:16	6/15/10 12:25	6/15/10 15:12	6/15/10 17:54	6/16/10 6:32	6/16/10 9:47
Haul number	39	40	41	42	43	44	45	46	47	48	49
Start latitude	5719.24	5738.52	5758.97	5819.38	5920.45	5901.55	5841.34	5820.93	5801.06	5740.58	5720.88
Start longitude	16559.79	16559.66	16559.51	16400.56	16641.77	16642.06	16640.55	16642.66	16644.81	16644.89	16645.91
End latitude	5720.74	5739.96	5800.44	5820.64	5918.91	5859.99	5839.86	5819.39	5759.63	5739.08	5719.41
End longitude	16559.85	16559.66	16559.20	16559.03	16642.36	16641.87	16640.23	16642.54	16645.12	16645.00	16646.08
Bottom depth (m)	62	52	46	40	20	27	39	45	49	60	67
Duration (h)	0.51	0.50	0.51	0.50	0.53	0.55	0.50	0.52	0.50	0.52	0.50
Distance fished (km)	2.78	2.68	2.73	2.78	2.91	2.90	2.75	2.86	2.67	2.78	2.75
Net width (m)	16.09	16.44	16.12	15.74	15.32	15.32	15.57	16.17	15.36	15.67	16.96
Net measured?	Y	Y	Y	Y	N	N	Y	Y	Y	Y	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	23.6	19.6	26.9	17.9		49.3	32.9	64.7	16.9	41.2	32.6
Other skates											
Sharks											
Total elasmobranch	**23.6**	**19.6**	**26.9**	**17.9**		**49.3**	**32.9**	**64.7**	**16.9**	**41.2**	**32.6**
Alaska plaice	243.6	99.1	129.8	71.3	4.0	44.9	198.2	91.3	83.7	188.4	31.4
Arrowtooth flounder											
Flathead sole	5.1	4.1	3.4					0.3		5.6	0.5
Greenland turbot	0.0										0.0
Pacific halibut	10.8	22.7	23.2	23.0	2.9	27.1	29.0	41.8	25.8	9.7	8.8
Rock sole	77.7	606.3	444.7	464.0	54.5	52.7	145.6	130.0	49.9	32.3	4.9
Yellowfin sole	325.0	200.4	291.3	610.8	151.6	2,431.6	255.1	419.9	75.0	770.3	207.9
Other flatfish					7.4	17.9	0.5				
Total flatfish	**657.1**	**928.5**	**889.0**	**1,169.0**	**220.5**	**2,574.2**	**628.4**	**683.0**	**234.4**	**1,000.7**	**253.0**
Walleye pollock	7.8	13.0	15.7	0.7		0.0	8.1	4.0	9.1	0.1	0.5
Pacific cod	4.5	121.6	212.2	602.3		0.2	25.1	28.8	164.6	5.4	10.6
Sablefish											
Atka mackerel											
Eelpouts	0.1										1.4
Pacific herring							0.1				
Pacific ocean perch											
Sculpins	2.8	11.6	8.1	13.8	20.8	24.1	9.8	15.4	11.4	1.1	0.7
Other rockfish											
Other roundfish	1.1	1.1	0.3	1.2	0.8	2.9	2.1	2.9	0.8	2.6	0.7
Total roundfish	**16.2**	**147.1**	**236.2**	**618.0**	**21.6**	**27.3**	**45.1**	**51.1**	**185.9**	**9.1**	**13.9**
Blue king crab											
Red king crab	1.4		1.4			5.4	8.1	3.1			
Tanner crab, bairdi											0.1
Tanner crab, opilio	0.4									3.2	2.0
Other crab	36.2	16.6	1.9	14.2	8.0	1.9	10.0	2.1	91.1	152.3	11.3
Shrimp	0.2	0.0	0.0		1.5	0.0		0.0	0.0	0.0	0.0
Octopus											
Squids											
Snails	31.4	31.7	6.0	2.6					24.7	50.5	30.6
Starfish	34.9	176.6	43.8	84.6	2.9	36.8	77.7	85.4	17.3	57.7	66.1
Other invertebrates	159.9	294.9	173.8	8.1	0.6	0.7	2.5	33.9	701.3	257.7	348.9
Total invertebrates	**264.6**	**519.9**	**226.8**	**109.5**	**12.9**	**44.8**	**98.3**	**124.5**	**834.3**	**521.5**	**459.0**
Miscellaneous	18.4	20.8	4.8	7.5	1.0	0.5			116.5	35.9	1.1
Total catch	**985.0**	**1,640.0**	**1,387.1**	**1,922.0**	**256.1**	**2,696.0**	**804.8**	**1,000.8**	**1,388.0**	**1,614.0**	**760.2**

Appendix A Table 2. -- Continued.

Station	**G-05**	**F-05**	**E-05**	**D-05**	**C-05**	**B-05**	**B-04**	**D-03**	**E-03**	**F-03**	**G-03**
Start date and time	6/16/10 12:53	6/16/10 15:43	6/17/10 6:25	6/17/10 9:22	6/17/10 12:27	6/17/10 15:15	6/17/10 18:18	6/18/10 6:29	6/18/10 9:10	6/18/10 11:46	6/18/10 14:17
Haul number	50	51	52	53	54	55	56	57	58	59	60
Start latitude	5700.60	5640.79	5620.77	5601.09	5540.71	5520.27	5519.33	5559.33	5619.55	5639.68	5659.29
Start longitude	16646.50	16647.04	16647.74	16649.15	16650.18	16650.32	16612.95	16735.76	16734.99	16733.52	16732.05
End latitude	5659.11	5639.28	5619.30	5559.61	5539.16	5518.81	5520.77	5600.80	5621.01	5641.16	5700.80
End longitude	16646.85	16647.02	16647.93	16649.36	16650.09	16649.31	16612.31	16735.80	16734.68	16733.43	16731.91
Bottom depth (m)	71	75	86	96	109	111	120	124	103	84	74
Duration (h)	0.50	0.52	0.50	0.51	0.52	0.52	0.50	0.49	0.50	0.51	0.53
Distance fished (km)	2.79	2.81	2.74	2.76	2.88	2.91	2.74	2.72	2.74	2.73	2.81
Net width (m)	18.82	17.03	17.08	17.36	18.14	17.97	18.54	18.32	17.41	16.81	17.48
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	5.4	9.1	62.4	3.5	12.7	14.4				47.7	38.1
Other skates				4.0	10.6	3.2	4.1		0.1		
Sharks											
Total elasmobranch	**5.4**	**9.1**	**62.4**	**7.5**	**23.3**	**17.6**	**4.1**		**0.1**	**47.7**	**38.1**
Alaska plaice	15.9	2.0	44.5								14.4
Arrowtooth flounder			25.7	115.9	212.0	254.5	162.0	80.4	266.2	0.4	
Flathead sole	0.2	11.5	846.3	139.1	30.7	78.6	22.1	82.7	211.5	47.5	7.8
Greenland turbot		0.0	0.4								0.0
Pacific halibut	9.6	34.4	36.6	11.8	5.7	23.4		8.5	37.5	30.7	21.2
Rock sole	1.9	6.9	458.3	100.7	0.2				1.3	70.3	31.5
Yellowfin sole	64.7	35.9	34.9							6.1	73.2
Other flatfish				0.6	1.5	3.5	4.5	2.4	0.5		
Total flatfish	**92.1**	**79.2**	**600.6**	**228.9**	**219.5**	**281.4**	**166.5**	**91.3**	**305.4**	**107.5**	**140.3**
Walleye pollock	0.1	9.4	362.7	1,084.4	8.9	6.9			77.4	246.9	8.4
Pacific cod	5.4	97.6	212.9	68.0	10.2	30.8	1.4	29.6	53.3	195.8	20.9
Sablefish											
Atka mackerel											
Eelpouts	0.2	2.2	2.9	0.2	1.3	0.3		1.3	1.0	1.0	3.2
Pacific herring											
Pacific ocean perch											
Sculpins	0.6	2.3			0.1	0.9	0.1	0.1	8.2	31.8	2.0
Other rockfish											
Other roundfish	2.0	0.1		1.4	7.1	0.5	4.5	1.0	1.8	0.5	2.3
Total roundfish	**8.2**	**111.7**	**578.4**	**1,154.0**	**27.6**	**39.3**	**6.0**	**32.0**	**141.7**	**476.0**	**36.9**
Blue king crab											
Red king crab											
Tanner crab, bairdi	0.6	11.5	10.0	5.3	18.6	37.6	9.6	51.0	10.3	11.0	6.4
Tanner crab, opilio	1.3	3.0		1.5	4.5		1.6	0.4	0.4	7.4	65.0
Other crab	28.8	32.5	26.7	31.7	19.9	9.6	0.5	2.3	20.6	138.5	20.1
Shrimp	0.0	0.1			0.0	0.2	1.1	0.2	0.1	0.0	0.2
Octopus											
Squids											
Snails	71.8	112.5	32.6	13.8	22.7	18.1	1.6	2.4	42.2	108.3	14.2
Starfish	54.4	38.9	52.5	2.0	0.2	0.2	0.0	0.5	0.0	135.5	27.8
Other invertebrates	76.1	119.0	170.5	94.1	25.5	23.9	15.1	14.8	139.2	27.3	186.5
Total invertebrates	**233.0**	**317.4**	**292.3**	**148.4**	**91.5**	**89.6**	**29.5**	**71.8**	**212.7**	**428.0**	**320.1**
Miscellaneous	0.6	69.0	36.0	24.7	1.7	2.4	0.3	0.5	4.8	41.3	3.1
Total catch	**339.5**	**597.9**	**2,416.0**	**1,702.7**	**394.2**	**508.7**	**228.4**	**278.3**	**876.1**	**1,148.0**	**546.3**

Appendix A Table 2. -- Continued.

Station	**H-03**	**I-03**	**J-03**	**K-03**	**L-03**	**M-03**	**O-02**	**O-01**	**P-01**	**Q-02**	**Q-01**
Start date and time	6/18/10 16:57	6/19/10 6:23	6/19/10 9:08	6/19/10 11:41	6/19/10 14:08	6/19/10 16:35	6/20/10 6:24	6/20/10 9:10	6/20/10 11:48	6/20/10 15:23	6/21/10 6:15
Haul number	61	62	63	64	65	66	67	68	69	70	71
Start latitude	5719.21	5738.86	5759.46	5819.46	5839.80	5859.02	5938.67	5939.02	5959.43	6019.92	6019.92
Start longitude	16730.93	16729.54	16728.34	16726.32	16726.54	16725.25	16843.16	16802.88	16802.07	16842.51	16803.75
End latitude	5720.64	5740.33	5800.97	5820.92	5841.25	5900.49	5939.88	5940.36	6000.97	6020.35	6019.88
End longitude	16730.87	16729.64	16727.89	16725.85	16726.61	16725.28	16841.47	16801.70	16801.19	16845.42	16800.72
Bottom depth (m)	70	66	60	47	42	34	31	35	25	31	33
Duration (h)	0.50	0.50	0.51	0.51	0.50	0.50	0.51	0.50	0.52	0.50	0.51
Distance fished (km)	2.66	2.73	2.85	2.75	2.69	2.73	2.75	2.73	2.98	2.83	2.80
Net width (m)	16.71	16.96	16.47	15.44	14.98	15.38	15.20	15.32	14.49	15.32	15.86
Net measured?	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	73.0	34.3	20.1	47.2	9.7	10.7	114.6	94.2	73.7	22.1	26.5
Other skates											
Sharks											
Total elasmobranch	**73.0**	**34.3**	**20.1**	**47.2**	**9.7**	**10.7**	**114.6**	**94.2**	**73.7**	**22.1**	**26.5**
Alaska plaice	43.7	25.4	74.3	75.0	163.2	101.9	45.4	68.4	22.4	2.2	31.1
Arrowtooth flounder											
Flathead sole	13.3	0.9		0.3							
Greenland turbot		0.1									
Pacific halibut	25.4	71.3	29.1	96.4	34.4	24.3	14.6	2.3			21.7
Rock sole	18.1	34.8	33.9	116.5	133.0	87.6	23.4	33.1	17.1	2.1	4.2
Yellowfin sole	374.2	113.2	372.1	101.8	264.0	270.3	196.1	258.5	41.0	25.2	137.4
Other flatfish						1.2	22.3		2.8	0.6	1.1
Total flatfish	**461.5**	**244.7**	**509.3**	**389.7**	**594.5**	**485.3**	**301.7**	**362.2**	**83.2**	**30.2**	**195.4**
Walleye pollock	6.2	28.8	5.9	2.9	5.4	12.0	5.3	28.3	8.4	5.8	
Pacific cod	46.0	76.2	44.5	67.9	34.2	6.7	0.3	21.7			11.1
Sablefish											
Atka mackerel											
Eelpouts	0.4	0.7								0.2	
Pacific herring		0.1					0.1			0.2	17.6
Pacific ocean perch											
Sculpins	5.0	2.2	4.9	17.2	6.2	10.0	44.3	28.9	32.7	9.8	67.3
Other rockfish											
Other roundfish	1.3	1.4	1.4	7.2	2.7	2.7	8.4	3.2	0.6	3.3	3.3
Total roundfish	**58.8**	**109.5**	**56.7**	**95.2**	**48.4**	**31.4**	**58.4**	**82.1**	**41.7**	**19.2**	**99.3**
Blue king crab											
Red king crab					1.0	0.9	6.4	2.2	1.2		
Tanner crab, bairdi	0.7	0.3	1.7	0.3							
Tanner crab, opilio	2.7	3.8	2.8	0.0							
Other crab	54.5	37.6	170.2	6.4	5.2	5.2	4.0	3.5	4.3	5.1	1.2
Shrimp	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0
Octopus											
Squids											
Snails	98.8	51.6	45.1	20.5	17.7	0.0		1.0	0.6		
Starfish	102.2	133.9	167.6	85.9	131.0	99.7	87.2	381.5	52.6	6.4	28.4
Other invertebrates	657.9	75.3	281.2	44.3	20.5	4.9	0.2	0.7	1.4	0.4	0.5
Total invertebrates	**916.8**	**302.5**	**668.6**	**157.3**	**175.4**	**110.8**	**97.9**	**388.9**	**60.0**	**12.0**	**30.1**
Miscellaneous	54.5	11.4	47.2	0.6	3.8	0.4	0.2	0.5	0.3	0.8	0.1
Total catch	**1,578.0**	**703.2**	**1,302.0**	**690.3**	**831.8**	**638.5**	**572.9**	**928.0**	**259.0**	**84.4**	**351.4**

Appendix A Table 2. -- Continued.

Station	**Q-18**	**Q-19**	**P-19**	**P-18**	**O-18**	**O-19**	**N-19**	**N-18**	**N-01**	**M-19**	**M-18**
Start date and time	6/21/10 9:08	6/21/10 11:56	6/21/10 14:58	6/21/10 17:54	6/22/10 6:21	6/22/10 9:14	6/22/10 12:06	6/22/10 15:09	6/22/10 17:51	6/23/10 6:26	6/23/10 9:08
Haul number	72	73	74	75	76	77	78	79	80	81	82
Start latitude	6020.05	6020.45	6001.08	6000.73	5940.05	5940.60	5920.28	5920.35	5920.12	5900.15	5900.25
Start longitude	16920.92	17040.29	17039.95	16918.99	16925.34	17044.28	17043.61	16924.21	16802.57	17048.14	16926.08
End latitude	6020.07	6019.08	5959.68	5959.58	5940.20	5939.16	5919.97	5920.06	5920.25	5900.28	5859.17
End longitude	16917.98	17039.17	17041.07	16920.88	16922.50	17044.01	17046.48	16927.05	16805.51	17050.95	16928.10
Bottom depth (m)	37	43	46	40	40	48	50	42	41	54	47
Duration (h)	0.50	0.52	0.51	0.51	0.50	0.49	0.51	0.50	0.51	0.50	0.51
Distance fished (km)	2.72	2.77	2.79	2.77	2.70	2.69	2.79	2.76	2.81	2.72	2.78
Net width (m)	15.20	16.35	16.35	15.44	14.85	16.07	16.35	15.62	15.30	16.51	16.29
Net measured?	Y	N	N	Y	Y	Y	N	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	81.0	28.6	53.9	37.8	56.6	67.8	32.1	63.9	131.9	75.0	65.4
Other skates											
Sharks											
Total elasmobranch	**81.0**	**28.6**	**53.9**	**37.8**	**56.6**	**67.8**	**32.1**	**63.9**	**131.9**	**75.0**	**65.4**
Alaska plaice	365.4	382.5	187.9	201.7	85.7	355.3	232.8	65.9	71.8	283.9	192.3
Arrowtooth flounder											
Flathead sole		0.0	0.8		0.0	4.8	5.6			1.4	0.0
Greenland turbot											
Pacific halibut					6.9	2.9		1.0	3.0	2.1	4.5
Rock sole	6.8	1.3		1.2	4.9	2.2	13.1	17.2	33.6	29.4	57.1
Yellowfin sole	949.0	195.7	84.5	86.5	162.1	174.0	117.3	742.4	130.1	351.4	217.8
Other flatfish	1.9			0.7							
Total flatfish	**1,323.2**	**579.5**	**272.4**	**290.0**	**259.6**	**534.4**	**363.2**	**826.5**	**238.6**	**666.9**	**471.7**
Walleye pollock	15.5	17.0	16.6	3.4	15.1	22.4	19.4	10.2	21.2	9.5	32.4
Pacific cod	4.7	0.2	6.6	0.2	12.7		5.2	7.6	4.5	11.6	14.1
Sablefish											
Atka mackerel											
Eelpouts											
Pacific herring	1.6	0.1	0.1	0.7	0.5	0.1	0.1				
Pacific ocean perch											
Sculpins	23.1	12.9	10.8	15.6	25.1	15.3	5.8	15.9	22.7	13.2	10.5
Other rockfish											
Other roundfish	4.3	33.1	74.2	8.4	22.5	9.5	3.4	4.8	4.3	6.4	7.4
Total roundfish	**49.2**	**63.3**	**108.4**	**28.3**	**75.9**	**47.3**	**33.8**	**38.6**	**52.6**	**40.7**	**64.4**
Blue king crab											
Red king crab	1.5	2.2	2.2	0.8	7.2	1.1		8.3	10.1		3.2
Tanner crab, bairdi			0.0				0.7			5.9	0.1
Tanner crab, opilio		3.2	0.8	0.0		0.2	0.7	0.0		1.7	0.2
Other crab	13.2	124.5	48.9	22.9	13.0	48.9	93.0	11.3	12.1	28.9	25.4
Shrimp	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Octopus											
Squids											
Snails	6.9	28.8	5.5	3.6	15.9	14.3	43.4	12.9	8.0	8.7	22.1
Starfish	122.2	157.2	97.8	138.7	86.2	310.1	218.0	10.0	173.1	208.9	91.3
Other invertebrates	5.5	168.8	253.6	2.3	4.7	24.2	93.6	10.6	3.5	134.5	5.0
Total invertebrates	**149.3**	**484.7**	**408.9**	**168.4**	**126.9**	**398.7**	**449.3**	**53.1**	**206.9**	**388.7**	**147.3**
Miscellaneous	5.2	80.0	51.0	3.4	1.5	32.9	36.0	0.9	1.8	45.3	4.4
Total catch	**1,608.0**	**1,236.0**	**895.3**	**527.8**	**520.6**	**1,086.0**	**920.0**	**983.0**	**631.9**	**1,218.0**	**753.2**

Appendix A Table 2. -- Continued.

Station	**L-18**	**L-19**	**K-19**	**K-18**	**K-01**	**J-01**	**I-01**	**H-01**	**E-01**	**E-18**	**E-19**
Start date and time	6/23/10 11:49	6/23/10 14:35	6/23/10 17:32	6/24/10 6:22	6/24/10 9:10	6/24/10 11:55	6/24/10 14:37	6/24/10 18:07	6/25/10 7:32	6/25/10 10:29	6/25/10 13:24
Haul number	83	84	85	86	87	88	89	90	92	93	94
Start latitude	5840.69	5840.82	5820.92	5819.72	5820.25	5800.58	5740.98	5720.56	5619.22	5619.06	5619.90
Start longitude	16931.00	17051.72	17052.75	16929.29	16808.87	16811.70	16813.78	16815.63	16820.69	16945.45	16908.78
End latitude	5839.37	5839.38	5819.44	5819.98	5818.86	5759.11	5739.53	5719.12	5620.63	5620.43	5619.92
End longitude	16929.77	17051.04	17053.24	16932.05	16810.08	16811.84	16813.86	16816.03	16819.89	16944.44	16906.14
Bottom depth (m)	53	63	68	66	60	67	69	74	129	155	128
Duration (h)	0.50	0.51	0.52	0.51	0.52	0.50	0.50	0.49	0.51	0.50	0.49
Distance fished (km)	2.72	2.74	2.78	2.76	2.85	2.72	2.70	2.71	2.75	2.75	2.72
Net width (m)	16.05	16.96	17.01	16.89	17.31	16.83	16.80	16.24	17.82	17.85	16.76
Net measured?	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	52.0	93.2	51.8	22.7	32.9	13.8	16.9	35.5	7.9		
Other skates										20.5	15.9
Sharks											
Total elasmobranch	**52.0**	**93.2**	**51.8**	**22.7**	**32.9**	**13.8**	**16.9**	**35.5**	**7.9**	**20.5**	**15.9**
Alaska plaice	200.5	174.9	167.9	612.7	77.5	378.5		7.3			
Arrowtooth flounder									359.3	459.4	242.4
Flathead sole		3.5	0.6	9.9	0.1	0.1		6.8	41.9	0.4	42.9
Greenland turbot		0.0	0.4	0.3	0.0	0.1		0.1			
Pacific halibut	11.0	0.9		7.7	11.7	36.4	101.4	85.0	8.2	5.7	4.8
Rock sole	31.3	0.9	4.4	6.5	8.0	29.6	1.3	36.5			8.0
Yellowfin sole	160.5	191.5	11.8	652.0	410.1	47.8	18.2	112.4			
Other flatfish									1.2	0.7	6.2
Total flatfish	**403.3**	**368.2**	**184.5**	**1,279.2**	**507.5**	**492.2**	**120.9**	**241.3**	**368.7**	**465.8**	**261.4**
Walleye pollock	0.3	9.5	0.6	1.0	5.9	0.7		29.9	7.4	518.2	235.1
Pacific cod	4.0	7.5	0.0	6.3	49.2	19.4	409.9	34.1	40.8	29.3	21.2
Sablefish											
Atka mackerel											
Eelpouts	1.7		0.4	3.3					0.1	0.1	0.1
Pacific herring											
Pacific ocean perch									0.5		
Sculpins	9.6	5.0	1.5	2.0	8.9	2.1	6.6	0.2	10.1	2.4	
Other rockfish									2.1		
Other roundfish	10.7	2.2	2.1	2.8	3.8	0.6	0.3	2.4	6.2	1.5	0.2
Total roundfish	**26.3**	**24.1**	**4.7**	**15.4**	**67.8**	**22.8**	**416.9**	**66.5**	**67.2**	**551.5**	**256.6**
Blue king crab						0.2					
Red king crab	3.5										
Tanner crab, bairdi	2.3	10.5	4.6	11.9	2.5	1.7	21.4	39.6	12.3	137.5	34.6
Tanner crab, opilio	1.1	5.7	8.3	6.6	2.6	7.3	37.5	192.3	3.6	9.0	11.0
Other crab	45.1	78.0	19.8	31.5	126.0	57.4	115.5	23.7	6.7	6.1	14.6
Shrimp	0.0	0.0	0.0	0.0	0.1			0.0	1.3	3.9	0.4
Octopus									0.0	0.0	
Squids										0.1	
Snails	81.8	60.4	52.6	17.0	65.9	50.7	127.0	14.9	6.8	1.8	19.7
Starfish	172.0	169.5	332.4	150.4	126.1	254.8	33.2	46.8	0.2	0.1	2.7
Other invertebrates	84.3	222.1	391.8	32.9	183.7	531.6	1,863.2	90.2	43.7	120.4	34.1
Total invertebrates	**390.2**	**546.2**	**809.4**	**250.3**	**506.9**	**903.7**	**2,197.9**	**407.6**	**74.6**	**278.8**	**116.9**
Miscellaneous	34.9	46.8	23.0	0.5	16.9	21.3	146.5	10.7	0.4	1.0	0.5
Total catch	**906.7**	**1,082.0**	**1,074.0**	**1,578.0**	**1,132.0**	**1,454.0**	**2,899.0**	**768.5**	**560.7**	**1,318.0**	**694.3**

Appendix A Table 2. -- Continued.

Station	**E-20**	**E-21**	**D-18**	**D-01**	**B-01**	**C-01**	**C-18**	**E-22**	**F-23**	**F-24**	**F-25**	**G-23**
Start date and time	6/25/10 16:03	6/25/10 18:35	6/26/10 6:59	6/26/10 10:09	6/30/10 8:12	6/30/10 11:04	6/30/10 13:59	7/1/10 7:07	7/1/10 10:39	7/1/10 15:29	7/1/10 18:20	7/2/10 6:55
Haul number	95	96	97	98	99	100	101	102	103	105	106	107
Start latitude	5621.35	5620.16	5601.09	5601.24	5520.17	5539.50	5539.69	5619.47	5639.18	5639.96	5641.17	5659.90
Start longitude	17033.92	17158.35	16945.74	16823.32	16827.11	16825.14	16948.70	17120.21	17239.86	17203.22	17326.45	17236.49
End latitude	5621.38	5620.34	5559.66	5559.80	5521.05	5540.91	5540.90	5620.43	5640.06	5639.87	5639.76	5700.02
End longitude	17031.47	17155.62	16946.52	16823.67	16824.92	16824.25	16947.11	17118.19	17237.64	17200.40	17325.62	17233.78
Bottom depth (m)	135	109	152	132	147	135	135	121	119	126	134	109
Duration (h)	0.46	0.53	0.51	0.50	0.52	0.51	0.51	0.51	0.51	0.53	0.50	0.51
Distance fished (km)	2.54	2.86	2.77	2.71	2.83	2.77	2.80	2.74	2.80	2.89	2.75	2.77
Net width (m)	17.31	17.22	17.53	18.58	18.58	19.38	18.67	18.63	18.15	17.50	18.04	18.19
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	2.7		6.8						0.1			13.1
Other skates	27.8	11.7	13.4	8.2	1.2		4.2	3.0		6.2	2.1	0.7
Sharks	2.6											
Total elasmobranch	**33.0**	**11.7**	**20.1**	**8.2**	**1.2**		**4.2**	**3.0**	**0.1**	**6.2**	**2.1**	**13.8**
Alaska plaice												
Arrowtooth flounder	38.5	180.9	123.1	159.7	218.3	108.5	103.0	126.5	130.6	61.7	150.7	148.0
Flathead sole		119.9	13.8	96.7	99.8	47.7	27.0	75.9	6.0	2.6	17.6	20.1
Greenland turbot												0.5
Pacific halibut	4.1	17.8		21.6	6.0	8.2	28.4	12.1		1.8	20.7	5.8
Rock sole										2.5	1.0	
Yellowfin sole												
Other flatfish	2.5	13.4	30.4	4.4	4.1	10.7	28.6	71.6	18.7	8.2	12.5	
Total flatfish	**45.2**	**212.1**	**153.5**	**185.7**	**228.4**	**127.4**	**160.1**	**210.2**	**149.3**	**74.2**	**184.9**	**154.2**
Walleye pollock	1,123.0	2,100.6	0.6	1.9			3.6	0.0	569.5	2.0		69.3
Pacific cod	136.0	52.0	100.9	1.8	20.7	23.8	108.8	37.7	27.4	56.5	62.6	77.3
Sablefish												
Atka mackerel												
Eelpouts	0.1			0.1								1.7
Pacific herring												
Pacific ocean perch	1.9						1.5				5.7	
Sculpins	7.6	23.2	3.5	8.3	0.4	7.8	13.3	0.0	5.8	0.1	8.4	5.1
Other rockfish	30.7					2.3	0.4				3.4	
Other roundfish	16.0		0.1	4.7	9.4	9.3	1.8	0.0	0.0	0.3	0.4	11.0
Total roundfish	**1,315.2**	**2,175.8**	**105.1**	**16.8**	**30.4**	**43.1**	**129.4**	**37.7**	**602.7**	**58.9**	**80.5**	**164.3**
Blue king crab												
Red king crab												
Tanner crab, bairdi	4.7	34.6	27.8	2.4	20.1	4.2	2.6	8.4	0.4	6.2	3.5	10.0
Tanner crab, opilio	8.5	1.8	1.1	0.4		0.5		2.3	66.2	4.5		49.6
Other crab	6.7	15.7	12.2	6.5	3.1	2.4	3.4	4.9	22.7	14.1	10.3	45.3
Shrimp	0.5	0.4	1.8	1.3	1.5	0.9	1.7	0.4	1.3	5.4	5.9	2.0
Octopus							0.0	0.1	0.0	0.0	0.0	
Squids			0.1								0.0	
Snails	1.9	14.8	9.2	5.9	24.5	6.6	20.3	25.2	7.7	7.4	25.4	23.5
Starfish	1.3	0.8	9.2	0.7	0.2	0.1	0.3		0.9		4.2	2.1
Other invertebrates	2.4	59.3	44.7	13.4	69.1	37.9	48.7	120.8	73.5	1,375.9	214.8	29.4
Total invertebrates	**26.0**	**127.3**	**106.0**	**30.7**	**118.4**	**52.6**	**76.9**	**162.0**	**172.8**	**1,413.5**	**264.2**	**161.7**
Miscellaneous	0.5	1.2	0.0	0.3	0.8	2.8	6.0	3.0	6.6	16.7	11.7	12.0
Total catch	**1,420.0**	**2,648.0**	**398.6**	**338.4**	**479.0**	**273.6**	**403.5**	**491.8**	**937.5**	**1,572.0**	**561.0**	**526.2**

Appendix A Table 2. -- Continued.

Station	**G-24**	**G-25**	**G-26**	**H-26**	**H-24**	**H-25**	**I-25**	**I-26**	**J-26**	**K-27**	**K-26**	**L-26**
Start date and time	7/2/10 11:29	7/2/10 14:12	7/2/10 16:59	7/2/10 19:32	7/3/10 6:55	7/3/10 9:53	7/3/10 12:25	7/3/10 15:16	7/3/10 18:07	7/4/10 6:50	7/4/10 12:31	7/4/10 15:12
Haul number	109	110	111	112	113	114	115	116	117	118	120	121
Start latitude	5700.65	5659.72	5659.59	5718.18	5719.57	5720.20	5739.13	5740.08	5759.19	5819.44	5819.31	5839.17
Start longitude	17200.98	17323.89	17445.66	17440.56	17355.97	17311.33	17313.01	17436.53	17432.64	17542.44	17426.04	17423.29
End latitude	5700.69	5659.62	5700.72	5719.54	5719.98	5721.49	5740.58	5741.45	5800.66	5820.73	5820.89	5840.19
End longitude	17358.25	17321.20	17443.83	17439.47	17353.19	17309.74	17311.99	17435.66	17431.94	17541.00	17425.87	17421.27
Bottom depth (m)	116	122	141	121	108	117	119	146	116	162	115	126
Duration (h)	0.51	0.50	0.52	0.51	0.52	0.53	0.53	0.49	0.52	0.51	0.53	0.50
Distance fished (km)	2.77	2.74	2.80	2.75	2.90	2.89	2.87	2.70	2.82	2.76	2.93	2.73
Net width (m)	17.56	18.09	18.17	17.87	17.92	17.88	18.28	17.54	18.13	18.51	17.98	18.05
Net measured?	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates		0.1	14.8	14.7	7.6	0.1	8.9	31.3	9.5	8.7	6.2	33.4
Other skates			16.2		5.4	1.2		2.2		24.3	5.9	2.7
Sharks												
Total elasmobranch		**0.1**	**30.9**	**14.7**	**13.0**	**1.3**	**8.9**	**33.5**	**9.5**	**33.0**	**12.1**	**36.1**
Alaska plaice												
Arrowtooth flounder	136.0	65.9	87.9	318.4	178.6	134.0	50.1	47.4	130.1	68.6	163.9	303.9
Flathead sole	7.1	0.6	5.3	17.5	4.6	14.3	11.0	12.2	16.6	88.7	60.6	97.8
Greenland turbot					0.1							
Pacific halibut	20.1			26.9	35.2	8.2	4.5		22.8		26.6	39.6
Rock sole									0.8	2.1	11.5	9.6
Yellowfin sole												
Other flatfish	3.3	0.6	10.7	2.0		0.5		8.1	2.0	6.3	0.7	
Total flatfish	**159.4**	**66.4**	**98.6**	**347.2**	**213.8**	**142.8**	**54.6**	**55.5**	**155.7**	**77.0**	**202.6**	**353.1**
Walleye pollock	0.7	926.6		274.4	24.3	17.2	2,002.6	6,961.2	25.5		0.5	267.2
Pacific cod	88.9	89.7	10.8	18.6	87.5	44.7	58.2	24.6	81.9	51.3	251.0	176.9
Sablefish												
Atka mackerel								1.8				
Eelpouts	0.1				3.1	0.7					0.1	
Pacific herring												
Pacific ocean perch			0.7									
Sculpins	0.6	8.2	0.1	2.8	8.2	12.2	17.9	0.1	7.8	6.3	34.6	3.2
Other rockfish								1.9				
Other roundfish	5.4	0.0	0.8	0.1	4.1	0.0	4.6		0.0	11.3	0.2	0.0
Total roundfish	**95.7**	**1,024.5**	**12.3**	**295.9**	**127.2**	**74.8**	**2,083.3**	**6,989.5**	**115.2**	**68.9**	**286.4**	**447.4**
Blue king crab												
Red king crab												
Tanner crab, bairdi	1.4	3.0	0.7	1.6	9.6	1.9	0.9	4.6	7.2	11.7	3.6	0.0
Tanner crab, opilio	52.4	22.2		4.2	125.0	41.3	167.8	70.6	24.9	0.0	50.9	114.0
Other crab	15.6	12.9	10.8	13.7	53.8	21.0	23.1	2.4	22.3	11.5	43.0	69.3
Shrimp	4.1	1.9	4.1	0.5	1.6	3.4	0.3		0.4	3.4	0.4	0.2
Octopus			0.0	0.3					0.0		0.8	
Squids										0.0		
Snails	18.0	24.7	39.5	24.9	27.7	19.5	22.0	22.4	10.8	6.3	26.4	38.2
Starfish	1.4	1.5	22.6	0.5	2.3	0.8	2.2	3.9	5.6	1.7	2.0	2.7
Other invertebrates	1,383.7	156.0	357.3	632.0	65.9	71.6	9.3	2.4	18.7	33.1	8.4	5.5
Total invertebrates	**1,476.5**	**222.1**	**435.0**	**677.7**	**286.0**	**159.5**	**225.6**	**106.2**	**89.8**	**67.6**	**135.4**	**229.9**
Miscellaneous	7.3	2.3	4.4	7.1	9.7	4.1	2.6	0.4	5.6	1.5	7.6	9.7
Total catch	**1,746.0**	**1,316.0**	**586.5**	**1,360.0**	**654.3**	**396.7**	**2,386.0**	**7,197.4**	**392.5**	**336.8**	**704.7**	**1,174.0**

Appendix A Table 2. -- Continued.

Station	**L-27**	**L-28**	**M-28**	**M-27**	**M-26**	**M-25**	**J-22**	**J-21**	**J-20**	**J-19**	**J-18**	**JI2019**
Start date and time	7/4/10 18:08	7/5/10 6:55	7/5/10 9:59	7/5/10 12:36	7/5/10 15:22	7/5/10 18:17	7/6/10 6:55	7/6/10 9:47	7/6/10 12:41	7/6/10 15:26	7/6/10 18:06	7/7/10 6:52
Haul number	122	123	124	125	126	127	128	129	130	131	132	133
Start latitude	5839.26	5841.09	5900.54	5900.26	5859.87	5900.56	5759.90	5800.10	5800.01	5800.08	5759.98	5749.89
Start longitude	17544.66	17503.38	17658.51	17535.10	17415.74	17454.07	17259.52	17137.74	17016.51	17054.18	16932.50	17041.26
End latitude	5840.63	5841.55	5900.98	5900.02	5859.91	5859.17	5759.79	5759.96	5800.12	5800.10	5759.92	5749.95
End longitude	17543.34	17506.17	17501.37	17538.05	17418.71	17455.14	17102.29	17140.64	17019.34	17057.34	16935.35	17038.45
Bottom depth (m)	155	192	129	126	117	106	86	74	70	70	69	66
Duration (h)	0.51	0.51	0.52	0.52	0.52	0.50	0.51	0.52	0.51	0.56	0.51	0.51
Distance fished (km)	2.85	2.83	2.87	2.87	2.86	2.76	2.75	2.88	2.81	3.13	2.81	2.80
Net width (m)	18.10	18.38	18.04	18.04	17.72	18.37	17.66	21.31	17.53	17.67	17.01	16.21
Net measured?	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	9.7	0.3	12.8	16.0	153.5	122.0	48.4	35.2	20.3	16.3	34.0	16.4
Other skates	4.4	12.0	3.8	5.7	3.4							
Sharks												
Total elasmobranch	**14.1**	**12.3**	**16.6**	**21.7**	**156.9**	**122.0**	**48.4**	**35.2**	**20.3**	**16.3**	**34.0**	**16.4**
Alaska plaice						15.2	2.5	83.3	41.3	129.1	17.5	46.8
Arrowtooth flounder	397.8	141.1	180.8	335.3	286.9	70.6	28.1					
Flathead sole	13.9	2.0	141.3	33.1	50.7	177.8	1.6	31.7	0.3		0.3	0.5
Greenland turbot			0.2	0.3	1.2	3.7	0.2	0.6	0.7	0.9	0.4	0.2
Pacific halibut	10.2	21.4	78.6	49.8	3.6	28.8	20.7	26.5	2.3	18.8	9.1	4.8
Rock sole			6.6	3.1	43.3	6.7	22.9	241.1	4.3	1.5	12.6	3.9
Yellowfin sole							0.8	92.8	8.2	20.0	37.5	21.9
Other flatfish		9.6	0.0									
Total flatfish	**408.0**	**172.1**	**266.2**	**388.6**	**335.1**	**125.0**	**75.1**	**444.2**	**56.9**	**170.3**	**77.1**	**77.7**
Walleye pollock	12.5	322.1	12.2	398.8	2,217.2	377.5	2,146.7	671.8	6.0	5.0	0.7	0.3
Pacific cod	70.4	35.5	38.8	87.1	1,961.6	119.3	120.0	92.2	3.5	0.1	0.2	0.1
Sablefish												
Atka mackerel												
Eelpouts			0.9	0.4	0.4	4.3	2.1	0.4	1.5	0.7		
Pacific herring												
Pacific ocean perch		0.4										
Sculpins	0.3	5.8	11.3	11.9	12.2	31.9	1.0	7.9	12.1	5.3	7.5	11.9
Other rockfish												
Other roundfish	6.8	6.6	1.6	1.6	0.1	0.5		4.1	4.8	1.0	7.1	7.9
Total roundfish	**90.0**	**370.4**	**64.7**	**499.9**	**4,191.5**	**533.4**	**2,269.8**	**776.4**	**27.8**	**12.1**	**15.5**	**20.2**
Blue king crab			10.9	1.4		5.7						
Red king crab											1.7	
Tanner crab, bairdi	8.7	1.1	5.2	0.8	2.7	6.6	1.5	1.9	2.2	0.7	0.5	4.1
Tanner crab, opilio	0.4	0.1	0.8	52.3	21.5	144.7	10.1	184.1	58.8	13.0	13.3	23.7
Other crab	53.1	7.3	40.6	130.0	215.2	123.9	4.8	318.7	210.7	153.2	56.1	142.2
Shrimp	0.8	17.1	0.7	1.0	0.3	0.5	0.0				0.1	0.0
Octopus	0.1	0.0		0.1		0.1						
Squids		0.9										
Snails	9.9	10.6	35.3	38.5	42.5	76.8	16.7	21.7	54.6	54.9	30.5	22.2
Starfish	2.7	1.1	9.6	12.9	1.4	9.7	13.9	85.2	137.6	46.8	292.7	44.2
Other invertebrates	23.5	19.4	11.9	82.2	25.6	61.7	22.8	82.2	128.7	1,215.7	2,287.3	206.5
Total invertebrates	**99.2**	**57.7**	**115.0**	**319.3**	**309.2**	**429.6**	**69.8**	**693.9**	**592.6**	**1,484.3**	**2,682.2**	**442.9**
Miscellaneous	14.5	4.1	14.9	21.5	51.9	64.2	1.3	88.7	56.9	139.1	34.9	44.7
Total catch	**639.7**	**618.7**	**618.7**	**1,284.0**	**5,095.2**	**1,452.0**	**2,466.0**	**2,070.0**	**754.8**	**1,822.0**	**2,844.0**	**602.4**

Appendix A Table 2. -- Continued.

Station	**JI2120**	**I-21**	**IH2120**	**IH2221**	**F-21**	**F-22**	**GF2221**	**G-22**	**HG2221**	**JI2221**	**I-22**
Start date and time	7/7/10 9:32	7/7/10 11:43	7/7/10 14:08	7/7/10 16:37	7/8/10 7:05	7/8/10 9:53	7/8/10 12:29	7/8/10 14:37	7/8/10 16:58	7/9/10 6:57	7/9/10 9:12
Haul number	134	135	136	137	138	139	140	141	142	143	144
Start latitude	5750.42	5739.81	5729.90	5729.79	5639.84	5639.39	5650.08	5700.12	5705.79	5751.21	5740.27
Start longitude	17002.80	17144.04	17002.14	17126.56	17153.28	17115.23	17133.22	17114.04	17132.04	17124.12	17107.58
End latitude	5749.67	5738.36	5730.12	5729.88	5639.82	5640.45	5650.15	5700.61	5707.19	5749.88	5739.30
End longitude	17000.35	17144.37	17159.76	17123.75	17150.56	17117.20	17130.47	17111.37	17130.94	17122.75	17105.41
Bottom depth (m)	71	73	69	74	97	113	100	94	49	77	84
Duration (h)	0.51	0.50	0.45	0.52	0.52	0.52	0.51	0.52	0.51	0.52	0.51
Distance fished (km)	2.80	2.71	2.42	2.82	2.80	2.82	2.80	2.86	2.81	2.82	2.81
Net width (m)	16.96	15.88	19.72	16.50	17.65	17.81	17.42	16.92	15.21	17.24	16.85
Net measured?	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	6.8	58.8	15.0	117.9	27.3		0.8	54.8	41.6	51.4	64.7
Other skates				3.1	0.6	0.2		7.1			
Sharks											
Total elasmobranch	**6.8**	**58.8**	**15.0**	**121.0**	**27.8**	**0.2**	**0.8**	**61.9**	**41.6**	**51.4**	**64.7**
Alaska plaice	28.9	48.4	10.0	17.3					4.3	67.6	4.3
Arrowtooth flounder				190.1	55.9	89.4	94.5	162.3	17.5		103.8
Flathead sole	1.5	29.8	2.9	226.0	495.2	12.8	17.1	419.2	5.7	94.6	450.1
Greenland turbot	0.1	0.0	0.0								0.7
Pacific halibut	13.6	28.7	4.6	79.8	4.1	6.0	3.1	20.0	35.2	13.7	26.7
Rock sole	1.8	571.4	161.9	327.4				4.0	1,336.5	948.5	49.1
Yellowfin sole	8.6	39.7	30.4	3.1					12.0	260.9	
Other flatfish						0.4		0.9			
Total flatfish	**53.0**	**688.2**	**207.0**	**617.7**	**60.0**	**95.9**	**97.6**	**187.2**	**1,405.5**	**1,290.7**	**184.5**
Walleye pollock	232.3	394.9	193.3	1,902.7	743.3	1,219.7	266.5	503.6	54.4	435.8	496.8
Pacific cod	31.5	130.6	129.8	417.2	52.3	53.9	73.9	124.5	41.6	130.3	349.6
Sablefish											
Atka mackerel											
Eelpouts	1.4				0.2	0.1	0.1	1.0		3.2	6.7
Pacific herring		0.9									
Pacific ocean perch											
Sculpins	5.5	21.5	10.1	52.7	28.4	0.0	15.7	29.0	103.0	10.1	9.0
Other rockfish											
Other roundfish	1.4	9.0	8.1	10.6	0.7	0.2	15.5	9.3	16.2	17.1	1.6
Total roundfish	**272.2**	**556.9**	**341.3**	**2,383.2**	**825.0**	**1,273.9**	**371.7**	**667.4**	**215.2**	**596.5**	**863.7**
Blue king crab											
Red king crab			10.8	8.9					33.7		1.2
Tanner crab, bairdi	4.9	2.5	16.0	2.3	30.2	13.7	17.6	14.0	69.0	0.6	2.5
Tanner crab, opilio	45.3	58.1	12.6	4.4	0.2	12.8	1.9	4.8		51.1	176.6
Other crab	127.6	96.3	63.7	118.0	60.6	12.3	144.2	26.0	23.8	316.2	23.5
Shrimp	0.0		0.0		0.4	0.3	1.1	0.9			0.3
Octopus		0.1	0.0								0.3
Squids											
Snails	8.1	92.0	10.2	37.1	18.5	12.9	33.2	17.3	9.8	62.4	83.9
Starfish	58.5	139.1	109.1	35.0	22.7	2.7	13.4	337.4	271.0	234.6	5.0
Other invertebrates	145.6	555.6	290.5	376.0	83.5	43.4	16.3	10.8	4.6	349.1	334.5
Total invertebrates	**390.0**	**943.7**	**512.8**	**581.6**	**216.0**	**98.1**	**227.7**	**411.3**	**411.9**	**1,014.0**	**627.8**
Miscellaneous	58.9	544.6	149.0	391.5	10.0	2.7	42.7	9.1	6.1	174.7	133.1
Total catch	**782.4**	**2,822.0**	**1,228.0**	**4,320.8**	**1,634.0**	**1,483.7**	**757.5**	**1,756.0**	**2,086.0**	**3,222.0**	**2,324.0**

Appendix A Table 2. -- Continued.

Station	**H-23**	**I-23**	**J-23**	**N-21**	**N-20**	**O-20**	**P-20**	**Q-20**	**L-20**	**K-20**	**K-21**
Start date and time	7/9/10 12:32	7/9/10 15:21	7/9/10 18:05	7/10/10 6:54	7/10/10 10:36	7/10/10 13:18	7/10/10 15:54	7/10/10 18:21	7/11/10 6:56	7/11/10 9:27	7/11/10 12:08
Haul number	145	146	147	148	149	150	151	152	153	154	155
Start latitude	5720.66	5738.72	5758.72	5919.64	5919.63	5938.58	5959.06	6019.07	5841.15	5821.41	5819.26
Start longitude	17233.47	17227.43	17223.99	17126.00	17009.75	17005.25	17003.34	17159.88	17012.95	17015.49	17139.24
End latitude	5719.77	5740.18	5800.09	5919.90	5920.08	5940.08	6000.57	6020.54	5839.67	5819.91	5820.15
End longitude	17231.24	17228.13	17225.24	17128.84	17006.85	17004.58	17003.28	17159.47	17012.57	17015.87	17136.79
Bottom depth (m)	99	99	98	68	60	56	53	53	67	69	73
Duration (h)	0.51	0.52	0.51	0.51	0.52	0.52	0.51	0.51	0.51	0.51	0.52
Distance fished (km)	2.78	2.78	2.81	2.74	2.89	2.85	2.81	2.76	2.78	2.80	2.91
Net width (m)	17.65	17.10	17.65	16.96	16.65	17.21	16.54	16.40	17.60	17.23	16.81
Net measured?	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	31.8	54.0	91.3	2.9	18.8	18.8	49.0	6.7	20.2	20.5	5.8
Other skates											
Sharks											
Total elasmobranch	**31.8**	**54.0**	**91.3**	**2.9**	**18.8**	**18.8**	**49.0**	**6.7**	**20.2**	**20.5**	**5.8**
Alaska plaice				9.3	748.8	197.7	301.0	89.3	320.3	147.8	8.5
Arrowtooth flounder	107.8	195.4	130.9								
Flathead sole	62.3	1,175.0	1,346.3	0.2	9.7	2.1	5.5	0.5	4.0	2.3	0.0
Greenland turbot			11.1	0.1	0.2	0.0	0.0		1.1	0.5	0.4
Pacific halibut	21.9	15.3	11.3				0.7		5.4	2.4	13.4
Rock sole		18.8	8.3	0.4	1.2	0.1	1.3		0.7	0.8	5.7
Yellowfin sole				0.4	95.9	32.6	97.4	9.6	33.8	4.8	4.9
Other flatfish	1.2		1.0				0.1	0.1	0.1		
Total flatfish	**130.9**	**229.5**	**162.6**	**10.2**	**846.1**	**230.4**	**400.6**	**99.0**	**361.4**	**156.3**	**32.8**
Walleye pollock	1,176.1	1,824.5	586.0	0.0	0.1	2.8	5.3	0.1	2.7	2.1	21.2
Pacific cod	270.9	81.9	93.0		4.3		0.0	0.0	4.1		69.6
Sablefish											
Atka mackerel											
Eelpouts		3.1	5.7	2.1		0.9	0.1	3.3	4.3	0.3	3.1
Pacific herring				0.0							
Pacific ocean perch											
Sculpins	26.4	13.5	10.9	1.9	3.1	7.9	0.6		3.9	2.6	3.0
Other rockfish											
Other roundfish	15.4	0.3	1.0	7.8	31.1	19.9	4.5	3.0	2.4	4.1	0.4
Total roundfish	**1,488.8**	**1,923.3**	**696.5**	**11.8**	**38.6**	**31.5**	**10.5**	**6.5**	**17.3**	**9.1**	**97.4**
Blue king crab											
Red king crab							5.9				
Tanner crab, bairdi	2.1	4.8	7.0	0.0	0.7	0.2		0.1	15.4	1.2	1.0
Tanner crab, opilio	30.7	190.7	40.2	86.4	51.7	35.9	48.7	64.3	34.4	16.3	47.4
Other crab	57.4	12.4	79.0	21.7	59.2	67.4	35.0	43.7	40.4	52.9	72.5
Shrimp	0.1		0.1	0.1		0.0	0.0	0.0	0.0	0.0	0.1
Octopus											
Squids											
Snails	44.5	21.9	186.8	38.9	121.7	129.6	59.2	27.6	95.5	24.3	14.1
Starfish	6.3	104.7	93.1	21.0	287.8	208.9	50.8	30.7	356.1	78.4	81.5
Other invertebrates	20.2	18.9	31.8	107.4	57.2	98.9	347.9	45.7	89.7	183.5	58.6
Total invertebrates	**161.2**	**353.4**	**438.0**	**275.5**	**578.3**	**541.0**	**547.5**	**212.0**	**631.5**	**356.7**	**275.2**
Miscellaneous	13.0	12.9	13.3	33.1	34.4	19.7	24.9	29.1	12.6	21.1	18.8
Total catch	**1,888.0**	**3,748.0**	**2,748.0**	**333.7**	**1,526.0**	**843.4**	**1,038.0**	**353.8**	**1,047.1**	**565.9**	**429.9**

Appendix A Table 2. -- Continued.

Station	**L-21**	**L-22**	**O-21**	**P-21**	**Q-21**	**Q-22**	**Q-23**	**L-23**	**L-24**	**K-24**	**K-23**
Start date and time	7/11/10 14:48	7/11/10 17:27	7/12/10 6:58	7/12/10 9:33	7/12/10 12:05	7/12/10 14:49	7/12/10 17:36	7/13/10 7:03	7/13/10 9:51	7/13/10 12:41	7/13/10 15:37
Haul number	156	157	158	159	160	161	162	163	164	165	166
Start latitude	5839.30	5840.00	5939.10	5959.04	6018.95	6020.17	6021.10	5839.96	5840.13	5820.80	5819.55
Start longitude	17134.74	17256.37	17125.38	17122.48	17121.45	17240.13	17356.33	17218.94	17338.64	17341.23	17219.70
End latitude	5840.74	5840.20	5940.58	6000.60	6020.38	6020.20	6019.63	5840.07	5840.14	5819.30	5819.59
End longitude	17133.58	17253.54	17125.22	17122.60	17120.37	17237.10	17355.79	17216.09	17335.82	17341.36	17222.55
Bottom depth (m)	73	82	66	65	61	66	59	92	101	102	95
Duration (h)	0.53	0.51	0.51	0.52	0.52	0.51	0.52	0.51	0.51	0.51	0.52
Distance fished (km)	2.89	2.77	2.74	2.89	2.82	2.80	2.76	2.77	2.74	2.78	2.79
Net width (m)	16.83	17.49	17.38	17.57	18.08	17.32	16.96	17.40	17.61	17.07	17.37
Net measured?	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	40.5	43.8	20.3	6.2	24.6	14.9	62.0	38.6	29.7	98.0	87.7
Other skates											
Sharks								65.3	28.8		
Total elasmobranch	**40.5**	**43.8**	**20.3**	**6.2**	**24.6**	**14.9**	**62.0**	**103.9**	**58.5**	**98.0**	**87.7**
Alaska plaice	20.6	11.9	51.0	48.2	44.6	11.0	14.1	2.7		3.0	2.6
Arrowtooth flounder		2.1						14.1	41.7	57.0	65.4
Flathead sole	2.0	2.0	1.9	0.8	0.4	1.6				6.3	20.0
Greenland turbot	1.0	1.0	0.1	0.0				10.0	2.9	1.2	1.2
Pacific halibut		4.5		0.7				16.4	2.9		3.6
Rock sole	0.3	13.9	0.4	0.7			0.1	3.3	1.6	34.6	4.7
Yellowfin sole	0.7	1.4	0.9	0.6	2.4	8.4	3.3				
Other flatfish											
Total flatfish	**22.6**	**34.7**	**52.4**	**50.3**	**47.0**	**19.4**	**17.5**	**46.4**	**49.1**	**95.8**	**77.5**
Walleye pollock	1.0	479.5	0.0		0.1	0.1	0.0	3,257.9	2,688.1	466.3	771.7
Pacific cod		376.1					5.7	157.2	59.8	68.1	281.8
Sablefish											
Atka mackerel											
Eelpouts	1.9	2.3	1.5	2.5	0.7	0.7		0.4	0.1	0.4	0.5
Pacific herring			0.2	0.0	0.4					0.6	
Pacific ocean perch											
Sculpins	2.4	0.0	0.1	0.3	2.6	2.6	33.3	10.5	6.2	30.5	8.2
Other rockfish											
Other roundfish	1.5	0.3	1.2	6.4	3.5	2.2	23.4			0.1	0.2
Total roundfish	**6.7**	**858.2**	**3.1**	**9.2**	**7.2**	**5.5**	**62.4**	**3,426.0**	**2,754.1**	**566.0**	**1,062.3**
Blue king crab							1.6				
Red king crab				3.1			1.9				
Tanner crab, bairdi	1.3	0.2	0.1				0.3	0.0	0.2	2.2	0.2
Tanner crab, opilio	48.8	77.0	37.1	25.8	40.3	131.7	148.7	18.5	41.3	108.0	28.1
Other crab	14.4	16.3	39.1	20.4	11.2	6.2	334.8	8.7	45.7	77.4	20.4
Shrimp	0.0	0.0	0.0	0.0	0.0	0.1	4.7		0.0	0.2	0.0
Octopus											
Squids											
Snails	31.1	40.4	24.6	4.4	5.6	13.0	116.4	37.2	17.7	252.9	119.2
Starfish	39.7	48.0	9.4	7.0	4.7	10.2	6.6	20.6	13.7	43.4	31.7
Other invertebrates	177.2	37.8	58.6	22.1	10.4	1.7	293.5	57.3	116.1	42.9	51.0
Total invertebrates	**312.5**	**219.7**	**168.9**	**82.8**	**72.2**	**162.8**	**908.2**	**142.3**	**234.8**	**527.0**	**250.6**
Miscellaneous	4.4	4.8	17.8	5.6	1.6	2.4	99.8	7.4	27.5	26.8	10.9
Total catch	**388.7**	**1,163.3**	**264.5**	**154.8**	**153.1**	**206.5**	**1,150.0**	**3,726.0**	**3,124.0**	**1,320.0**	**1,509.0**

Appendix A Table 2. -- Continued.

Station	**K-22**	**N-22**	**O-22**	**P-22**	**R-22**	**S-22**	**T-25**	**U-25**	**V-25**	**V-26**	**U-26**
Start date and time	7/13/10 18:19	7/14/10 6:57	7/14/10 9:35	7/14/10 12:09	7/14/10 16:52	7/14/10 19:16	7/15/10 6:54	7/15/10 9:29	7/15/10 11:57	7/15/10 14:54	7/15/10 17:34
Haul number	167	168	169	170	171	172	173	174	175	176	177
Start latitude	5819.77	5919.04	5939.28	5958.93	6039.08	6058.26	6118.84	6139.05	6159.02	6200.08	6140.35
Start longitude	17257.10	17249.13	17246.41	17241.60	17233.96	17230.71	17425.09	17420.78	17415.68	17532.99	17533.22
End latitude	5819.95	5920.57	5940.82	6000.42	6040.56	6059.77	6120.34	6140.55	6200.50	6200.07	6138.86
End longitude	17100.00	17248.76	17246.63	17241.33	17233.26	17230.93	17424.51	17420.95	17415.76	17529.72	17533.52
Bottom depth (m)	84	75	72	69	62	60	73	70	62	72	76
Duration (h)	0.51	0.52	0.52	0.51	0.51	0.52	0.52	0.51	0.52	0.53	0.52
Distance fished (km)	2.86	2.86	2.87	2.77	2.81	2.80	2.83	2.79	2.75	2.87	2.77
Net width (m)	17.18	17.67	18.32	17.98	18.68	18.33	18.98	17.28	16.66	17.40	17.27
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	42.9	4.6	9.4	2.5	22.3	15.1	26.0	23.8	13.5	23.4	36.4
Other skates			0.1								
Sharks											
Total elasmobranch	**42.9**	**4.6**	**9.5**	**2.5**	**22.3**	**15.1**	**26.0**	**23.8**	**13.5**	**23.4**	**36.4**
Alaska plaice		1.6	1.0	17.9	14.3	11.1	0.3	2.3	13.0		
Arrowtooth flounder	2.8										
Flathead sole	0.0	0.5	0.4	2.5	0.4	2.1	9.1	6.1	7.6	6.3	13.3
Greenland turbot	0.3	0.8	0.4	0.0			0.0	0.1	0.4	0.9	0.8
Pacific halibut	8.8			1.2	1.1					0.6	
Rock sole	7.2	0.7									
Yellowfin sole	3.6		0.1	1.2	2.6	3.3	0.2		0.1		
Other flatfish							0.1	0.0	0.9	0.1	0.1
Total flatfish	**22.7**	**3.1**	**1.6**	**20.3**	**18.0**	**14.5**	**0.6**	**2.5**	**14.4**	**1.6**	**0.9**
Walleye pollock	871.8	0.1		0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0
Pacific cod	259.7			0.0							
Sablefish											
Atka mackerel											
Eelpouts	1.4	4.6	0.7	2.0	0.4	0.5	5.9	5.7	24.6	7.8	1.6
Pacific herring						0.0					0.1
Pacific ocean perch											
Sculpins		0.8	0.3	1.2	0.4	0.1	1.0	1.0	1.2	0.5	0.6
Other rockfish											
Other roundfish		4.8	7.7	3.0	2.4	5.6	3.5	6.3	4.4	7.0	6.6
Total roundfish	**1,132.9**	**10.3**	**8.8**	**6.2**	**3.3**	**6.3**	**10.5**	**13.1**	**30.1**	**15.4**	**8.8**
Blue king crab							1.3				
Red king crab											
Tanner crab, bairdi	0.8	0.5	0.2								
Tanner crab, opilio	58.3	388.2	99.4	70.2	270.7	724.0	188.7	159.4	102.4	137.7	92.5
Other crab	29.6	39.4	50.9	32.7	1.2	5.1	0.7	3.6	11.8	1.9	2.6
Shrimp	0.0	0.0	0.0	0.0	0.0		0.1	0.2	0.2	0.7	0.2
Octopus								0.1		0.4	0.2
Squids											
Snails	88.6	67.7	22.8	16.7	2.3	6.3	3.3	24.2	97.0	19.8	14.7
Starfish	38.1	19.9	27.4	8.7	7.0	7.7	13.4	27.9	7.5	17.6	14.0
Other invertebrates	54.6	8.1	21.4	2.1	7.6	19.7	15.8	36.3	73.3	28.4	20.6
Total invertebrates	**270.0**	**523.9**	**222.1**	**130.5**	**288.8**	**762.7**	**223.2**	**251.7**	**292.2**	**206.5**	**144.7**
Miscellaneous	13.4	53.5	43.7	10.4	0.4	1.3	0.4	1.1	4.5	1.3	1.9
Total catch	**1,482.0**	**595.8**	**286.2**	**172.4**	**333.3**	**801.9**	**269.7**	**298.2**	**362.4**	**254.6**	**205.9**

Appendix A Table 2. -- Continued.

Station	**I-24**	**N-24**	**N-25**	**N-26**	**N-27**	**O-27**	**O-26**	**ON2625**	**O-25**	**ON2524**	**O-24**
Start date and time	7/16/10 19:18	7/22/10 8:18	7/22/10 11:28	7/22/10 14:29	7/22/10 17:42	7/22/10 20:46	7/23/10 7:25	7/23/10 9:54	7/23/10 11:59	7/23/10 14:35	7/23/10 17:10
Haul number	178	179	180	181	182	183	184	185	186	187	188
Start latitude	5740.80	5919.97	5919.91	5920.15	5919.94	5939.92	5940.06	5930.27	5939.68	5930.31	5940.00
Start longitude	17348.18	17331.76	17451.23	17413.49	17534.12	17529.82	17407.55	17426.77	17443.30	17304.26	17325.11
End latitude	5739.36	5920.03	5919.93	5920.32	5919.93	5939.94	5940.04	5930.32	5939.95	5930.56	5940.56
End longitude	17348.70	17328.91	17448.30	17410.50	17531.27	17532.77	17410.45	17429.69	17446.33	17307.26	17327.91
Bottom depth (m)	108	87	102	110	120	116	104	102	95	93	84
Duration (h)	0.51	0.51	0.52	0.54	0.51	0.51	0.50	0.51	0.54	0.52	0.51
Distance fished (km)	2.72	2.72	2.79	2.86	2.71	2.77	2.73	2.76	2.90	2.88	2.83
Net width (m)	17.24	17.36	17.65	17.28	17.87	17.87	17.11	17.65	17.65	17.65	17.36
Net measured?	Y	N	N	Y	N	N	Y	N	N	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	27.3	16.3	52.6	71.3	124.2	109.0	41.0	64.8	36.7	17.3	5.3
Other skates	4.9				0.0						
Sharks	50.3										
Total elasmobranch	**82.5**	**16.3**	**52.6**	**71.3**	**124.2**	**109.0**	**41.0**	**64.8**	**36.7**	**17.3**	**5.3**
Alaska plaice		1.5	44.0	46.2		4.2	1.9				
Arrowtooth flounder	45.5	5.9	106.5	128.0	206.5	76.6	93.8	70.9	10.6	14.7	
Flathead sole	0.8		4.8	7.6	8.4	5.1	5.4	6.3	1.6		1.8
Greenland turbot		3.3	15.7	4.2	1.1	6.4	4.5	5.0	3.2	5.3	1.4
Pacific halibut	6.7	1.6		44.4	19.4	8.8		1.4		10.0	
Rock sole		19.7	30.5	43.2	17.0	2.9	2.7	7.5	3.7	5.4	6.3
Yellowfin sole											
Other flatfish											
Total flatfish	**52.2**	**32.0**	**196.8**	**266.0**	**244.0**	**98.9**	**102.8**	**84.8**	**17.5**	**35.5**	**7.7**
Walleye pollock	2,149.3	1,068.0	538.8	359.8	268.5	279.0	1,236.3	718.1	778.4	2,453.3	461.9
Pacific cod	117.3	34.4	85.5	81.9	34.0	102.0	56.2	129.3	28.8	146.3	43.2
Sablefish											
Atka mackerel											
Eelpouts		0.7	7.4	8.0	3.1	26.6	4.6	13.2	4.9	0.2	0.7
Pacific herring											
Pacific ocean perch											
Sculpins	0.4	0.2	35.7	39.9	17.8	17.1	0.7	14.9	18.2	45.3	0.4
Other rockfish											
Other roundfish	1.3	0.2	0.0	0.3	0.5	0.1	0.1	0.5	2.4	0.2	1.3
Total roundfish	**2,268.3**	**1,103.6**	**667.4**	**489.9**	**323.8**	**424.8**	**1,298.0**	**875.9**	**832.7**	**2,645.4**	**507.5**
Blue king crab		2.8	0.9	2.6		2.1	36.5	24.1	7.3	13.5	6.2
Red king crab											
Tanner crab, bairdi	0.4	5.8	1.1	2.0	0.3	0.9	0.4	0.3	0.5	0.3	0.3
Tanner crab, opilio	85.4	153.8	82.4	122.8	11.8	49.7	43.7	24.5	49.3	31.4	56.3
Other crab	39.5	13.5	46.1	69.0	51.1	45.4	25.3	48.9	10.6	7.8	27.4
Shrimp	0.1	0.0	0.2	0.8	3.5	3.7	0.8	4.1	1.3	0.2	0.0
Octopus		2.4		0.1	0.1				0.0		
Squids											
Snails	32.3	29.1	57.4	55.2	41.3	53.0	27.2	27.9	37.8	20.6	16.5
Starfish		7.1	26.6	8.4	1.9	17.4	7.7	12.3	14.3	43.3	21.4
Other invertebrates	62.8	37.2	55.8	21.8	26.7	24.7	20.2	24.4	21.2	29.9	30.9
Total invertebrates	**220.4**	**251.7**	**270.6**	**282.6**	**136.7**	**196.9**	**161.8**	**166.7**	**142.2**	**147.2**	**159.0**
Miscellaneous	15.7	12.4	20.4	36.1	27.1	15.0	17.8	16.8	5.3	2.6	20.1
Total catch	**2,640.0**	**1,416.0**	**1,212.5**	**1,153.5**	**864.1**	**849.8**	**1,626.7**	**1,215.3**	**1,035.9**	**2,848.0**	**701.3**

Appendix A Table 2. -- Continued.

Station	**PO2423**	**P-24**	**QP2423**	**QP2524**	**P-25**	**PO2524**	**PO2625**	**QP2625**	**Q-25**	**R-26**	**Q-26**	**QP2726**
Start date and time	7/24/10 7:13	7/24/10 10:01	7/24/10 12:26	7/24/10 17:46	7/24/10 19:51	7/25/10 7:18	7/25/10 10:04	7/25/10 12:54	7/25/10 15:21	7/25/10 18:48	7/26/10 7:29	7/26/10 9:33
Haul number	189	190	191	193	194	195	196	197	198	199	200	201
Start latitude	5949.81	5959.02	6009.24	6009.19	5959.92	5950.40	5949.83	6007.05	6017.29	6039.50	6020.29	6011.16
Start longitude	17341.98	17326.70	17341.77	17301.67	17446.00	17306.05	17426.64	17413.78	17437.06	17552.35	17556.67	17539.17
End latitude	5949.97	5959.54	6010.14	6009.66	5959.86	5949.41	5949.86	6008.47	6018.02	6040.84	6019.38	6009.71
End longitude	17345.02	17323.85	17339.20	17459.77	17444.77	17303.82	17423.65	17414.51	17437.17	17551.30	17554.29	17538.85
Bottom depth (m)	76	65	58	60	75	80	94	87	63	86	90	100
Duration (h)	0.51	0.51	0.53	0.37	0.24	0.51	0.51	0.51	0.25	0.50	0.51	0.50
Distance fished (km)	2.87	2.82	2.91	1.97	1.15	2.78	2.80	2.72	1.35	2.66	2.76	2.70
Net width (m)	17.48	17.43	16.12	16.23	17.44	17.74	17.96	17.67	17.53	17.19	19.41	18.34
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	1	2	0	0	0	1	0	0	0
Alaska skates	9.9	4.6	52.6	4.0	1.3	14.3	11.6	15.8	5.7	20.8	1.5	34.9
Other skates				0.0								
Sharks												
Total elasmobranch	**9.9**	**4.6**	**52.6**	**4.0**	**1.3**	**14.3**	**11.6**	**15.8**	**5.7**	**20.8**	**1.5**	**34.9**
Alaska plaice	49.4	40.1	80.8	2.7	16.5				17.4			
Arrowtooth flounder							23.4	4.2				25.8
Flathead sole	17.0	1.8	2.4		3.3	11.7	0.3	38.8		10.8	3.7	70.5
Greenland turbot	0.3				0.1	0.9	0.9	10.5		1.3	0.5	4.3
Pacific halibut	0.8				0.9		1.2	88.2			0.9	1.4
Rock sole	8.8	8.8	68.7	25.0	27.1	16.0	2.8	6.9	19.4	2.7	2.5	1.8
Yellowfin sole	0.8	4.7	27.9	4.7					3.0	0.5		
Other flatfish		0.2			0.1							
Total flatfish	**60.1**	**53.7**	**177.3**	**32.5**	**44.6**	**16.9**	**28.3**	**109.8**	**39.9**	**4.5**	**3.8**	**33.3**
Walleye pollock	63.6	38.6	3.9	11.8	15.8	135.9	1,655.4	2,811.6	72.0	270.7	441.4	761.9
Pacific cod	18.6	15.5	7.2	71.1	3.8	30.2	55.9	49.5	67.6	14.4	57.8	17.0
Sablefish												
Atka mackerel												
Eelpouts	15.8	0.8				8.8	0.6		0.3	2.4	10.0	19.8
Pacific herring	0.3											
Pacific ocean perch												
Sculpins	7.8	3.7	28.3	52.9	1.2	0.4	26.3	24.6	38.1	2.3	0.9	3.1
Other rockfish												
Other roundfish	6.5	0.6	1.4	1.1	0.8	1.5	2.6	1.0	1.0	2.3	1.8	1.1
Total roundfish	**112.6**	**59.2**	**40.8**	**137.0**	**21.4**	**176.9**	**1,740.8**	**2,886.7**	**178.9**	**292.2**	**511.9**	**802.9**
Blue king crab	5.2	1.2	30.0	13.6	1.8	1.9	5.6	17.2	5.3		1.7	19.8
Red king crab												
Tanner crab, bairdi	0.1		0.0		0.0	0.3	0.1		0.1			0.3
Tanner crab, opilio	68.5	1.8	0.5	1.0	1.4	7.5	21.1	4.7	1.3	146.5	264.2	61.3
Other crab	126.1	29.4	35.3	36.8	21.8	68.1	9.6	1.5	27.4	0.3	2.8	10.8
Shrimp		0.0	19.8	0.0	0.1	0.0	0.0		0.2		0.1	0.3
Octopus						3.4	1.2					
Squids												
Snails	29.8	30.5	8.7	14.2	16.9	27.1	31.0	0.5	47.3	0.1	0.4	17.7
Starfish	15.3	3.7	25.6	51.0	2.8	9.8	14.7	6.8	4.4	1.1	2.9	10.8
Other invertebrates	22.6	27.8	15.7	125.1	194.6	48.3	36.6	25.9	93.6	15.2	17.5	30.7
Total invertebrates	**267.7**	**94.4**	**135.6**	**241.8**	**239.5**	**166.4**	**119.8**	**56.6**	**179.6**	**163.2**	**289.5**	**151.7**
Miscellaneous	60.2	10.6	4.1	6.9	8.3	30.6	5.1	0.3	8.9	0.0	0.3	0.8
Total catch	**527.4**	**224.2**	**412.8**	**422.1**	**318.4**	**416.7**	**1,906.0**	**3,108.0**	**413.0**	**491.5**	**810.7**	**1,094.1**

Appendix A Table 2. -- Continued.

Station	**P-26**	**PO2726**	**P-27**	**Q-31**	**Q-30**	**P-30**	**P-31**	**P-32**	**R-32**	**R-31**	**S-31**	**S-30**
Start date and time	7/26/10 11:53	7/26/10 14:02	7/26/10 16:14	7/27/10 7:43	7/27/10 10:32	7/27/10 13:25	7/27/10 15:45	7/27/10 18:30	7/28/10 7:55	7/28/10 10:46	7/28/10 13:36	7/28/10 16:27
Haul number	202	203	204	205	206	207	208	209	210	211	212	213
Start latitude	6000.74	5949.99	5959.18	6020.37	6019.96	6000.70	5959.80	5959.91	6039.88	6040.09	6058.80	6059.92
Start longitude	17402.37	17547.93	17525.39	17834.74	17715.82	17717.12	17848.80	17806.02	17946.36	17828.05	17822.55	17700.12
End latitude	5959.24	5950.06	6000.22	6019.88	6019.93	5959.25	5959.77	5959.95	6039.99	6040.04	6100.25	6059.80
End longitude	17402.46	17545.04	17523.21	17837.45	17718.75	17717.05	17845.93	17803.24	17949.38	17831.09	17822.20	17703.06
Bottom depth (m)	97	106	108	147	137	141	135	141	162	147	132	122
Duration (h)	0.50	0.50	0.52	0.48	0.49	0.49	0.50	0.48	0.50	0.51	0.50	0.49
Distance fished (km)	2.78	2.72	2.81	2.66	2.71	2.68	2.68	2.60	2.77	2.79	2.71	2.67
Net width (m)	18.02	17.78	17.26	18.04	18.04	17.57	17.36	17.01	18.18	18.18	18.04	17.87
Net measured?	Y	Y	Y	N	N	Y	Y	Y	N	N	N	N
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	3.6	88.1	56.3	65.0	75.5	88.8	42.4	1.7	45.7	116.4	113.1	69.4
Other skates								4.0	16.3	1.6	4.3	
Sharks												
Total elasmobranch	**3.6**	**88.1**	**56.3**	**65.0**	**75.5**	**88.8**	**42.4**	**5.7**	**62.0**	**117.9**	**117.5**	**69.4**
Alaska plaice												
Arrowtooth flounder	21.7	42.9	18.7	112.7	208.8	162.3	38.4	30.2	292.0	60.5	79.2	74.7
Flathead sole	0.1	3.9		13.8	26.9	56.6	91.6	131.9	30.1	1.4	1.5	1.8
Greenland turbot	3.6	20.1	3.8	76.8	28.8	23.1	21.1	25.8	11.8	25.3	19.7	16.7
Pacific halibut	0.9	2.4	12.7					24.3	7.3			
Rock sole		4.2			0.3			6.9				
Yellowfin sole												
Other flatfish												
Total flatfish	**26.1**	**69.6**	**35.2**	**189.5**	**237.9**	**185.4**	**59.5**	**87.2**	**311.1**	**85.8**	**98.9**	**91.4**
Walleye pollock	1,603.8	458.1	2,498.0	1,130.8	354.9	1,621.7	1,607.8	779.7	1,486.1	766.9	516.5	638.7
Pacific cod	92.9	42.4	43.4	35.5	15.8	77.2	441.1	22.1	19.7	9.6	14.6	26.6
Sablefish												
Atka mackerel												
Eelpouts	2.0	14.0	3.3	17.0	29.3	14.4	18.6	4.6	1.9	48.5	45.8	16.2
Pacific herring												
Pacific ocean perch												
Sculpins	4.0	18.7	13.3	14.4	15.7	44.5	35.2	22.6	10.8	7.8	14.6	3.3
Other rockfish												
Other roundfish	0.1	0.5	0.1	0.6	0.5	1.5		1.2	0.4	2.7	1.6	1.7
Total roundfish	**1,702.8**	**533.8**	**2,558.1**	**1,198.2**	**416.2**	**1,759.4**	**2,102.7**	**830.2**	**1,518.8**	**835.4**	**593.1**	**686.5**
Blue king crab	51.0	1.0	5.9									
Red king crab												
Tanner crab, bairdi	0.2	0.5	0.1	0.0	1.8	0.8	0.5	1.5	2.6	0.1	0.3	
Tanner crab, opilio	10.6	33.7	21.9	62.0	100.7	77.1	24.4	2.8	41.9	73.2	145.5	439.4
Other crab	1.0	57.9	61.0	1.2	26.2	19.6	89.7	0.8	7.8	3.4	3.2	6.5
Shrimp	0.1	13.5	2.1	12.8	6.3	3.2	4.9	18.3	2.7	53.8	13.3	2.8
Octopus		0.0		1.0	0.0	0.2				1.1		
Squids								0.6				
Snails	1.8	54.0	101.9	2.9	102.4	53.9	104.5	3.7	14.0	13.1	21.5	23.1
Starfish	1.2	133.3	77.4	16.9	105.3	147.7	220.0	30.1	6.2	9.7	12.2	20.2
Other invertebrates	13.4	28.5	15.6	673.3	7.3	15.2	70.5	349.9	5.1	25.9	11.8	15.0
Total invertebrates	**79.2**	**322.5**	**285.9**	**770.2**	**350.0**	**317.7**	**514.5**	**407.7**	**80.4**	**180.4**	**207.8**	**507.1**
Miscellaneous	0.2	16.4	14.5	1.3	10.9	8.0	7.3	1.3	5.6	2.8	3.1	1.8
Total catch	**1,812.0**	**1,034.2**	**2,950.0**	**2,238.0**	**1,117.3**	**2,416.0**	**2,818.0**	**1,464.0**	**2,008.0**	**1,223.7**	**1,021.7**	**1,358.0**

Appendix A Table 2. -- Continued.

Station	**T-30**	**R-30**	**R-29**	**S-29**	**S-28**	**R-28**	**P-28**	**P-29**	**Q-29**	**Q-28**	**Q-27**	**N-23**
Start date and time	7/28/10 19:21	7/29/10 7:48	7/29/10 10:23	7/29/10 13:10	7/29/10 16:04	7/29/10 18:55	7/30/10 7:41	7/30/10 10:20	7/30/10 13:07	7/30/10 15:44	7/30/10 18:23	7/31/10 7:39
Haul number	214	215	216	217	218	219	220	221	222	223	224	225
Start latitude	6119.29	6040.18	6040.02	6058.89	6059.72	6040.02	6000.03	5959.70	6019.46	6020.06	6019.67	5919.17
Start longitude	17702.31	17709.76	17746.70	17743.02	17624.39	17634.16	17646.55	17606.01	17758.42	17634.98	17515.43	17209.88
End latitude	6120.74	6040.08	6040.00	6100.38	6059.52	6038.73	5959.84	6000.68	6020.90	6019.83	6019.50	5920.66
End longitude	17702.30	17712.77	17749.72	17743.11	17627.37	17635.36	17643.64	17602.95	17758.54	17637.88	17518.31	17209.77
Bottom depth (m)	117	129	118	111	102	106	117	129	121	112	103	80
Duration (h)	0.50	0.50	0.50	0.50	0.50	0.48	0.50	0.63	0.49	0.50	0.50	0.51
Distance fished (km)	2.68	2.75	2.77	2.75	2.73	2.63	2.74	3.39	2.67	2.71	2.68	2.76
Net width (m)	17.87	18.04	17.44	16.76	16.79	16.43	17.53	17.22	17.27	16.56	16.59	17.28
Net measured?	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	15.0	40.1	38.1	28.1	32.6	67.0	66.6	90.3	75.0	97.8	48.2	15.5
Other skates	12.5	4.9			4.9	5.2			2.3	2.8		
Sharks												
Total elasmobranch	**27.5**	**45.0**	**38.1**	**28.1**	**37.6**	**72.2**	**66.6**	**90.3**	**77.3**	**100.6**	**48.2**	**15.5**
Alaska plaice											1.4	4.9
Arrowtooth flounder	71.2	129.0	45.2	26.9	28.6	26.1	106.7	65.0	104.6	75.7	72.6	
Flathead sole	1.9	2.6	4.5	7.4	9.4	4.0	2.6	4.7	18.2	682.1	29.6	
Greenland turbot	20.1	23.2	13.8	26.9	10.8	74.9	7.3	3.6	11.9	17.7	5.2	0.8
Pacific halibut								2.5	23.6	6.3	6.0	6.6
Rock sole			0.5		0.8		3.8		0.3		4.8	8.4
Yellowfin sole												0.6
Other flatfish												
Total flatfish	**91.3**	**152.2**	**59.5**	**53.8**	**40.2**	**101.0**	**117.8**	**71.2**	**140.4**	**99.7**	**90.0**	**21.3**
Walleye pollock	259.2	465.5	226.9	299.1	833.3	1,178.1	1,474.3	747.5	537.3	687.2	1,740.5	482.2
Pacific cod	77.3	19.4	8.1	45.9	31.1	21.9	114.0	37.4	41.8	78.8	49.6	97.1
Sablefish												
Atka mackerel												
Eelpouts	43.0	14.1	29.7	22.1	6.7	6.7	12.1	29.2	37.0	104.5	9.4	2.2
Pacific herring												
Pacific ocean perch												
Sculpins	5.2	8.2	26.4	6.8	3.8	15.7	45.5	14.9	16.9	28.7	20.0	3.4
Other rockfish												
Other roundfish	3.0	3.6	2.0	0.8	2.0	1.1	1.0	1.1	1.7	3.2	0.7	0.5
Total roundfish	**387.7**	**510.8**	**293.1**	**374.7**	**877.0**	**1,223.4**	**1,646.9**	**830.2**	**634.6**	**902.4**	**1,820.1**	**585.5**
Blue king crab			0.7	1.8			2.3			2.4		
Red king crab												
Tanner crab, bairdi		0.1				0.0	0.3	7.7	3.6	2.1		
Tanner crab, opilio	888.7	135.3	263.3	607.5	189.5	52.7	54.7	81.5	85.6	127.7	85.3	132.6
Other crab	5.4	1.6	16.7	8.7	1.1	13.6	71.9	88.2	7.6	31.1	6.4	5.4
Shrimp	0.5	21.6	3.0	0.0	0.8	0.2	0.2	4.4	1.2	10.2	0.1	
Octopus		0.1						1.2				
Squids												
Snails	40.5	13.2	40.7	14.1	17.7	294.0	122.7	217.6	15.4	62.5	6.8	53.5
Starfish	30.6	66.1	11.7	4.8	7.3	29.1	15.0	324.9	45.1	51.3	37.9	26.9
Other invertebrates	20.4	21.0	35.2	29.5	46.4	83.7	24.7	19.8	20.4	49.0	40.5	70.8
Total invertebrates	**986.2**	**258.9**	**371.3**	**666.3**	**262.7**	**473.3**	**291.8**	**745.4**	**178.8**	**336.4**	**176.9**	**289.1**
Miscellaneous	1.5	1.9	8.6	1.6	0.3	4.1	12.3	42.2	3.3	14.9	1.1	28.6
Total catch	**1,496.0**	**971.5**	**775.1**	**1,132.0**	**1,227.2**	**1,878.0**	**2,138.0**	**1,784.0**	**1,052.6**	**2,136.0**	**2,166.0**	**940.0**

Appendix A Table 2. -- Continued.

Station	**O-23**	**P-23**	**R-23**	**S-23**	**S-24**	**R-24**	**R-25**	**S-25**	**S-26**	**S-27**	**R-27**	**T-26**
Start date and time	7/31/10 10:21	7/31/10 13:00	8/1/10 7:28	8/1/10 10:01	8/1/10 12:28	8/1/10 15:11	8/1/10 18:17	8/2/10 7:30	8/2/10 10:14	8/2/10 13:05	8/2/10 16:00	8/3/10 7:38
Haul number	226	227	228	229	230	231	232	233	234	235	236	237
Start latitude	5939.31	5958.45	6039.05	6058.43	6059.99	6041.56	6041.09	6059.81	6100.36	6100.63	6040.65	6120.24
Start longitude	17207.76	17204.01	17353.37	17350.73	17312.87	17312.11	17432.99	17432.06	17550.32	17508.54	17510.58	17542.64
End latitude	5940.72	5959.88	6040.50	6059.41	6100.09	6040.08	6039.81	6059.54	6059.59	6059.65	6039.19	6119.88
End longitude	17206.85	17203.51	17352.48	17350.12	17309.89	17312.60	17431.43	17428.95	17547.65	17506.17	17511.27	17539.59
Bottom depth (m)	78	67	61	64	67	45	66	74	84	92	98	78
Duration (h)	0.51	0.50	0.51	0.34	0.50	0.52	0.51	0.52	0.51	0.51	0.51	0.52
Distance fished (km)	2.74	2.70	2.79	1.91	2.71	2.79	2.77	2.87	2.80	2.81	2.77	2.82
Net width (m)	17.36	16.59	19.72	16.99	20.20	16.27	16.83	18.54	18.24	17.65	17.81	17.47
Net measured?	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	7.3	10.0	40.7	12.7	11.3	69.0	21.9	4.4	24.0	16.0	29.9	2.6
Other skates												
Sharks												
Total elasmobranch	**7.3**	**10.0**	**40.7**	**12.7**	**11.3**	**69.0**	**21.9**	**4.4**	**24.0**	**16.0**	**29.9**	**2.6**
Alaska plaice	4.5	56.6	35.1	28.9	19.1	322.3	217.4	2.6		2.5	7.0	1.9
Arrowtooth flounder										0.0	50.3	
Flathead sole	11.0		4.7	3.7	7.1		5.4	6.1	9.7	8.7	51.6	6.2
Greenland turbot	1.5		0.0		0.1		0.2	0.1	0.9	4.1	10.8	1.1
Pacific halibut	5.1					22.5						
Rock sole	1.4	0.7	2.8	1.9	1.3	197.1	20.5		0.9	0.4	0.5	
Yellowfin sole	0.2	2.8	12.1	2.0		6.0	4.9	0.2	0.5			0.2
Other flatfish		0.0				0.1	0.5		0.0			
Total flatfish	**12.6**	**60.0**	**50.0**	**32.8**	**20.4**	**547.9**	**243.5**	**2.9**	**2.3**	**7.0**	**68.6**	**3.2**
Walleye pollock	102.2	6.0	45.4	0.1	45.5		18.0	0.0	104.1	132.5	669.5	0.1
Pacific cod	14.7	0.1	32.7		22.8	81.7	328.3		0.1	18.0	63.9	0.1
Sablefish												
Atka mackerel												
Eelpouts	5.4	0.5	0.4		0.8			0.9	0.9	3.0	13.7	1.6
Pacific herring												
Pacific ocean perch												
Sculpins	0.1	5.0	3.3	0.1	0.1	41.8	86.7	2.0	1.3	4.3	51.4	1.1
Other rockfish												
Other roundfish	524.8	1.5	3.2	2.8	2.7		0.0	1.0	1.7	0.5	2.0	5.9
Total roundfish	**647.2**	**13.2**	**84.9**	**3.0**	**72.0**	**123.5**	**433.0**	**3.9**	**108.1**	**158.4**	**800.6**	**8.7**
Blue king crab						188.5	1.9	0.9	1.4		1.2	
Red king crab												
Tanner crab, bairdi		1.5									0.5	
Tanner crab, opilio	134.1	196.7	253.3	57.4	122.3	0.2	14.2	129.1	76.3	196.8	524.3	205.2
Other crab	62.9	48.3	2.4	2.5	2.0	244.4	45.0	2.7	1.3	0.4	1.3	1.8
Shrimp		0.1		0.1	0.0		0.2	0.1	0.2	0.2	0.1	0.5
Octopus	3.8											
Squids												
Snails	5.6	29.4	8.9	3.8	10.3	230.4	96.4	1.6	0.8	4.4	3.0	2.4
Starfish	15.8	10.3	81.0	116.6	10.6	26.1	18.9	11.6	13.8	2.6	3.3	15.6
Other invertebrates	53.8	13.9	13.6	16.4	26.7	1.9	97.1	32.0	46.6	52.0	13.3	106.9
Total invertebrates	**275.9**	**300.2**	**359.2**	**196.9**	**171.9**	**691.6**	**273.9**	**178.1**	**140.3**	**256.4**	**547.0**	**332.3**
Miscellaneous	41.0	16.0	0.3	0.9	0.1	22.0	3.6	0.3	0.2	0.1	0.4	0.5
Total catch	**994.9**	**399.4**	**539.8**	**250.0**	**282.8**	**1,454.0**	**981.2**	**195.7**	**284.6**	**446.6**	**1,498.0**	**353.5**

Appendix A Table 2. -- Continued.

Station	**T-27**	**T-28**	**T-29**	**U-29**	**U-27**	**U-28**	**V-28**	**V-27**	**W-27**	**W-25**	**W-26**	**X-26**
Start date and time	8/3/10 10:17	8/3/10 12:54	8/3/10 15:34	8/3/10 18:18	8/4/10 7:43	8/4/10 10:31	8/4/10 13:18	8/4/10 16:08	8/4/10 18:44	8/5/10 7:34	8/5/10 10:16	8/5/10 13:11
Haul number	238	239	240	241	242	243	244	245	1	2	3	4
Start latitude	6120.28	6120.37	6119.10	6139.08	6140.30	6139.12	6159.42	6159.07	6218.75	6219.55	6219.44	6239.31
Start longitude	17502.98	17622.62	17743.02	17731.90	17656.32	17613.85	17609.13	17648.90	17643.77	17410.84	17527.85	17521.89
End latitude	6119.93	6120.07	6120.28	6140.52	6139.74	6140.50	6200.82	6200.40	6220.23	6220.37	6220.17	6240.75
End longitude	17659.98	17619.58	17741.05	17732.30	17653.40	17612.79	17610.43	17650.31	17643.36	17408.17	17525.07	17521.81
Bottom depth (m)	86	97	106	105	85	95	92	81	78	63	70	73
Duration (h)	0.51	0.51	0.52	0.49	0.51	0.51	0.51	0.51	0.51	0.51	0.50	0.50
Distance fished (km)	2.77	2.78	2.81	2.69	2.79	2.73	2.82	2.77	2.75	2.77	2.77	2.68
Net width (m)	17.79	18.21	18.44	19.06	18.05	18.07	18.82	17.97	17.46	17.08	17.25	18.84
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	6.1	9.4	50.7	7.7	2.8		1.4	5.0	14.4	26.0	15.1	6.7
Other skates	0.0		15.7									
Sharks												
Total elasmobranch	**6.1**	**9.4**	**66.4**	**7.7**	**2.8**		**1.4**	**5.0**	**14.4**	**26.0**	**15.1**	**6.7**
Alaska plaice										5.4		
Arrowtooth flounder		13.5	33.2	28.5								
Flathead sole	5.3	15.8	23.6	6.2	3.6	27.8	11.0	8.5	8.4	13.1	10.8	12.6
Greenland turbot	2.0	13.5	31.0	28.8	2.1	9.7	5.5	3.0	1.2	0.3	0.9	1.0
Pacific halibut			3.7									
Rock sole	0.9	0.5	0.5		0.5	1.2		0.4		0.9		
Yellowfin sole												
Other flatfish										0.1	0.1	
Total flatfish	**2.9**	**27.5**	**68.4**	**57.3**	**2.5**	**10.8**	**5.5**	**3.4**	**1.2**	**6.7**	**1.0**	**1.0**
Walleye pollock	258.1	689.8	474.3	295.2	609.5	1,022.7	227.3	0.8	0.0	0.2	0.9	
Pacific cod	14.6	8.1	13.0	15.7	3.7	72.4	3.5	0.2	0.3	5.0		
Sablefish												
Atka mackerel												
Eelpouts	3.0	2.2	5.4	2.6	5.0	43.3	2.2	0.6	1.9	30.8	24.1	5.0
Pacific herring	4.0	0.2				0.8						
Pacific ocean perch												
Sculpins	2.1	0.3	9.2	2.6	0.9	2.4	0.2	1.1	0.7	5.9	1.5	0.3
Other rockfish												
Other roundfish	0.8	4.0	1.5	2.9	6.4	0.5	4.9	10.8	18.7	12.3	45.7	14.2
Total roundfish	**282.5**	**704.5**	**503.4**	**318.9**	**625.5**	**1,142.0**	**238.1**	**13.5**	**21.5**	**54.2**	**72.2**	**19.6**
Blue king crab	1.6				1.2							
Red king crab												
Tanner crab, bairdi		0.1										
Tanner crab, opilio	150.6	166.6	298.1	153.3	157.7	339.4	168.6	205.8	174.2	250.2	434.0	780.4
Other crab	0.6	1.0	2.3	2.4	2.0	3.0	0.9	2.6	0.4	5.2	0.2	0.5
Shrimp	0.1	0.6	1.0	0.3	0.4	0.0	0.3	0.3	1.2	7.9	2.6	0.3
Octopus								0.2	1.5	0.5	1.3	1.8
Squids												
Snails	1.2	6.6	2.5	4.4	6.2	0.4	4.3	6.1	9.2	14.6	10.1	5.2
Starfish	5.1	3.9	0.8	0.5	7.9	5.6	7.1	19.2	11.0	27.1	32.3	1.6
Other invertebrates	27.9	35.9	33.0	37.8	44.4	32.7	22.6	21.9	31.3	86.8	49.8	6.5
Total invertebrates	**187.1**	**214.7**	**337.7**	**198.7**	**219.8**	**381.2**	**203.9**	**256.1**	**228.7**	**392.3**	**530.3**	**796.3**
Miscellaneous	0.3	1.2	0.7	0.8		0.1	0.8	0.5	0.2		0.3	
Total catch	**484.3**	**973.1**	**1,000.2**	**589.7**	**854.2**	**1,562.0**	**460.6**	**287.1**	**274.5**	**492.2**	**629.7**	**836.1**

Appendix A Table 2. -- Continued.

Station	**X-25**	**Y-25**	**Y-24**	**ZZ-24**	**ZZ-23**	**Y-23**	**X-23**	**X-24**	**W-24**	**V-24**	**U-24**	**T-24**
Start date and time	8/5/10 16:01	8/5/10 18:38	8/6/10 7:26	8/6/10 10:43	8/6/10 13:33	8/6/10 16:11	8/6/10 18:52	8/7/10 7:33	8/7/10 10:15	8/7/10 12:48	8/7/10 15:27	8/7/10 18:17
Haul number	5	6	7	8	9	10	11	12	13	14	15	16
Start latitude	6240.02	6258.82	6258.87	6320.18	6320.48	6301.02	6240.90	6240.87	6220.50	6200.85	6140.89	6120.89
Start longitude	17403.81	17400.35	17446.09	17433.63	17318.79	17323.46	17332.67	17449.25	17450.85	17457.34	17455.19	17305.06
End latitude	6240.02	6300.26	6300.90	6320.10	6318.99	6259.50	6239.42	6239.43	6218.95	6159.35	6139.45	6119.58
End longitude	17406.98	17559.59	17446.02	17436.88	17318.34	17323.64	17332.67	17448.72	17450.97	17457.59	17454.58	17306.43
Bottom depth (m)	69	74	68	70	63	60	53	63	58	58	65	68
Duration (h)	0.50	0.51	0.69	0.50	0.51	0.51	0.50	0.51	0.52	0.52	0.50	0.50
Distance fished (km)	2.71	2.75	3.76	2.73	2.77	2.83	2.73	2.72	2.87	2.79	2.71	2.71
Net width (m)	18.44	19.42	19.67	17.01	17.56	18.53	16.82	20.21	17.43	16.76	20.52	20.03
Net measured?	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates	1.2	16.1	22.2		40.1		17.1	8.6	25.2	7.6	2.4	9.0
Other skates												
Sharks												
Total elasmobranch	**1.2**	**16.1**	**22.2**		**40.1**		**17.1**	**8.6**	**25.2**	**7.6**	**2.4**	**9.0**
Alaska plaice				1.4	105.3	0.5	59.6		2.5	9.0	2.6	3.5
Arrowtooth flounder												
Flathead sole	0.8	1.5	7.2	54.6	40.5	1.7	6.4	0.7	7.2	12.2	5.0	5.8
Greenland turbot				0.3	0.0			0.0	0.2	0.1	0.1	0.2
Pacific halibut			2.0		1.9							
Rock sole								0.9			0.7	0.3
Yellowfin sole				0.1	4.1	0.2	2.9	0.2		0.9	0.8	0.4
Other flatfish		0.2		0.2	0.6	0.3	0.4	0.1	0.1	10.1		
Total flatfish		**0.2**	**2.0**	**2.0**	**111.9**	**1.0**	**62.8**	**1.2**	**2.7**	**20.0**	**4.1**	**4.5**
Walleye pollock				2.6	0.0		2.7			2.4	0.2	7.4
Pacific cod				1.2	13.9	3.8						0.1
Sablefish												
Atka mackerel												
Eelpouts	3.3	7.6	11.8	5.1		6.6	19.3	6.2	8.6	21.0	7.6	11.7
Pacific herring					0.7		0.2	0.2	0.0			
Pacific ocean perch												
Sculpins	1.6	2.6	5.9	3.6	1.8	4.5	0.4	0.6	0.9	2.7	1.1	0.3
Other rockfish												
Other roundfish	203.3	42.5	505.3	9.3	10.8	7.0	10.7	83.3	20.2	10.6	2.8	2.2
Total roundfish	**208.2**	**52.7**	**523.0**	**21.8**	**27.2**	**22.0**	**33.4**	**90.3**	**29.7**	**36.8**	**11.7**	**21.7**
Blue king crab		0.5		0.5								
Red king crab												
Tanner crab, bairdi												
Tanner crab, opilio	524.6	466.5	875.9	278.9	184.8	196.3	91.1	306.1	133.3	197.0	213.5	113.5
Other crab	2.4	0.9	4.5	1.6	10.4	2.3	26.3	0.6	9.7	15.0	4.4	1.9
Shrimp	0.8	1.7	3.6	3.2	0.6	0.4	0.9	0.1	0.6	0.1	0.1	0.0
Octopus		0.9							0.2			
Squids												
Snails	17.6	10.1	15.3	8.4	34.9	4.6	92.2	6.3	78.9	143.2	6.7	2.3
Starfish	0.4	0.1	0.5	3.6	36.1	8.3	22.6	4.1	15.4	5.5	49.6	34.4
Other invertebrates	8.3	10.9	4.9	12.6	15.8	6.5	16.5	9.4	31.1	62.9	42.4	37.6
Total invertebrates	**554.1**	**491.7**	**904.8**	**308.8**	**282.6**	**218.4**	**249.7**	**326.6**	**269.2**	**423.6**	**316.7**	**189.7**
Miscellaneous	0.5		0.2		0.4		1.8		14.2	1.5		0.0
Total catch	**764.8**	**562.2**	**1,459.3**	**387.2**	**502.8**	**243.1**	**371.1**	**427.4**	**348.1**	**501.7**	**339.8**	**230.8**

Appendix A Table 2. -- Continued.

Station	**U-23**	**T-23**
Start date and time	8/8/10 7:46	8/8/10 11:18
Haul number	17	18
Start latitude	6140.51	6119.82
Start longitude	17343.89	17352.56
End latitude	6139.74	6119.83
End longitude	17341.19	17349.42
Bottom depth (m)	60	61
Duration (h)	0.51	0.51
Distance fished (km)	2.78	2.81
Net width (m)	18.85	19.79
Net measured?	Y	Y
Performance	0	0
Alaska skates	12.5	8.6
Other skates		
Sharks		
Total elasmobranch	**12.5**	**8.6**
Alaska plaice	14.4	7.2
Arrowtooth flounder		
Flathead sole	2.2	1.8
Greenland turbot	0.0	0.0
Pacific halibut		1.6
Rock sole	1.0	0.8
Yellowfin sole	4.2	3.6
Other flatfish		
Total flatfish	**19.6**	**13.2**
Walleye pollock	0.0	2.8
Pacific cod		
Sablefish		
Atka mackerel		
Eelpouts	11.3	1.8
Pacific herring		
Pacific ocean perch		
Sculpins	1.3	0.5
Other rockfish		
Other roundfish	47.3	30.2
Total roundfish	**59.9**	**35.3**
Blue king crab		
Red king crab		
Tanner crab, bairdi		
Tanner crab, opilio	175.0	117.3
Other crab	5.2	5.4
Shrimp	0.0	0.1
Octopus		
Squids		
Snails	12.3	23.6
Starfish	26.3	55.5
Other invertebrates	7.4	10.8
Total invertebrates	**226.2**	**212.7**
Miscellaneous	0.3	0.6
Total catch	**320.7**	**272.1**

Appendix A Table 3. -- Haul and catch data for successfully completed tows by FV *Vesteraalen* during the 2010 northern Bering Sea bottom trawl survey.

Station	**R-01**	**R-02**	**S-02**	**S-01**	**T-01**	**T-02**	**U-02**	**U-01**	**V-01**	**V-02**	**W-02**
Start date and time	7/23/10 19:21	7/24/10 7:09	7/24/10 10:00	7/24/10 12:56	7/24/10 18:03	7/25/10 7:08	7/25/10 9:44	7/25/10 12:42	7/25/10 16:44	7/26/10 7:05	7/26/10 9:48
Haul number	1	2	3	4	5	6	7	8	9	10	11
Start latitude	6041.13	6040.08	6059.36	6101.11	6119.54	6119.17	6139.20	6139.00	6159.12	6159.04	6219.40
Start longitude	16800.02	16838.39	16839.35	16958.06	16955.98	16837.57	16835.81	16954.45	16952.45	16835.01	16833.87
End latitude	6039.73	6040.07	6100.78	6059.65	6120.97	6120.66	6140.59	6140.48	6200.65	6200.49	6220.85
End longitude	16959.60	16841.42	16839.20	16957.69	16956.02	16838.05	16837.01	16954.12	16952.38	16835.20	16833.67
Bottom depth (m)	28	24	23	29	28	25	24	29	28	25	25
Duration (h)	0.47	0.48	0.48	0.49	0.49	0.50	0.51	0.51	0.52	0.49	0.49
Distance fished (km)	2.63	2.77	2.63	2.71	2.65	2.80	2.78	2.76	2.84	2.70	2.69
Net width (m)	16.80	15.78	16.07	16.38	15.50	15.20	15.43	15.37	15.60	15.02	15.31
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	6	0	0	0	0	6	0	0	0	0	0
Alaska skates	53.6	37.5	52.5	18.5	82.5	12.4	49.5	48.4	3.3	213.3	
Other skates									0.6		
Sharks											
Total elasmobranch	**53.6**	**37.5**	**52.5**	**18.5**	**82.5**	**12.4**	**49.5**	**48.4**	**3.4**	**213.3**	
Alaska plaice	1.8	1.8		5.9	52.2	2.5	8.7	115.2	9.7	1.4	64.3
Arrowtooth flounder											
Flathead sole											0.6
Greenland turbot											
Pacific halibut	6.3	64.8	47.7	113.3	19.1	15.3	36.5	1.9		6.4	
Rock sole	3.7	49.7	5.2	42.3	37.7	1.4	1.3	29.5	3.0	2.4	24.9
Yellowfin sole	121.2	217.5	233.6	18.4	471.4	157.7	836.2	395.7	29.3	42.0	15.9
Other flatfish		2.3	1.4	1.0	2.1		0.2	2.4	2.4	0.5	2.6
Total flatfish	**132.5**	**336.5**	**287.5**	**27.4**	**582.5**	**176.9**	**882.4**	**544.7**	**323.3**	**421.6**	**197.7**
Walleye pollock	13.0	0.2	0.3	6.7	27.8	0.4	12.6	1.6	5.9	21.4	2.6
Pacific cod	7.2	0.2	0.7	33.7	2.7	7.6	49.2	1.3	0.4	1.2	0.1
Sablefish											
Atka mackerel											
Eelpouts											
Pacific herring	2.5	2.7	1.8	6.9	0.2	4.4	6.1	0.5	0.8	6.2	
Pacific ocean perch											
Sculpins	1.1	7.3	1.7	25.7	17.2	1.2	43.0	11.6	14.1	12.1	2.1
Other rockfish											
Other roundfish	0.5	9.2	17.4	6.6	2.7	3.4	26.9	2.9	1.3	32.1	1.4
Total roundfish	**24.3**	**19.4**	**3.2**	**78.8**	**5.6**	**26.4**	**137.7**	**27.0**	**21.5**	**72.5**	**25.0**
Blue king crab											
Red king crab					3.3		1.8				
Tanner crab, bairdi											
Tanner crab, opilio							0.2	0.2	0.3		0.4
Other crab		1.0	1.5	1.5	12.9	1.9	6.6	45.3	17.6	22.3	14.8
Shrimp		0.8	0.6	0.4	0.1		0.2	0.7	0.2	0.2	0.2
Octopus											
Squids											
Snails				0.8	5.2		9.3	14.9	68.7	3.2	18.3
Starfish	0.4		9.2	33.0	185.9	3.5	77.5	160.0	1.5	39.5	4.4
Other invertebrates	2.5	1.2	0.5	2.0	11.1	0.2	13.5	15.9	213.9	19.4	18.8
Total invertebrates	**2.9**	**1.3**	**11.3**	**37.2**	**218.3**	**32.6**	**18.2**	**371.2**	**49.6**	**84.2**	**91.6**
Miscellaneous		0.6	2.2	1.0	8.1	0.1	6.3	34.4	88.2	18.7	15.8
Total catch	**212.9**	**394.3**	**383.6**	**45.9**	**942.6**	**247.7**	**1184.4**	**125.4**	**954.0**	**81.4**	**329.2**

Appendix A Table 3. -- Continued.

Station	**W-01**	**X-01**	**X-02**	**Y-02**	**Y-01**	**ZZ-01**	**ZZ-02**	**AA-02**	**AA-01**	**AA-18**	**AA-19**	**BB-19**
Start date and time	7/26/10 12:37	7/26/10 16:01	7/26/10 19:28	7/27/10 7:07	7/27/10 9:56	7/27/10 13:25	7/27/10 16:55	7/28/10 7:09	7/28/10 11:07	7/28/10 13:59	7/28/10 16:43	7/28/10 19:15
Haul number	12	13	14	15	16	17	18	19	20	21	22	23
Start latitude	6219.21	6238.96	6239.12	6259.19	6259.35	6319.17	6319.09	6339.18	6340.71	6340.83	6338.90	6358.83
Start longitude	16951.36	16948.71	16830.67	16830.92	16947.71	16945.32	16829.38	16828.14	16942.46	17059.88	17015.06	17013.59
End latitude	6220.61	6240.50	6240.32	6300.67	6300.76	6320.64	6320.62	6340.67	6339.57	6339.48	6340.40	6400.09
End longitude	16950.27	16949.02	16832.79	16830.95	16946.43	16945.75	16829.72	16828.51	16944.51	17058.29	17014.64	17011.58
Bottom depth (m)	29	33	27	34	39	27	33	28	32	35	39	34
Duration (h)	0.50	0.51	0.51	0.50	0.51	0.52	0.51	0.51	0.49	0.50	0.52	0.51
Distance fished (km)	2.76	2.87	2.87	2.75	2.82	2.76	2.84	2.78	2.71	2.83	2.81	2.85
Net width (m)	15.72	15.41	15.02	16.25	15.82	15.28	15.73	15.27	15.49	15.58	16.77	15.77
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	6	0	0	0	0	0	0
Alaska skates		7.5		3.7	32.9				8.3	7.1		
Other skates			0.2					0.4				
Sharks												
Total elasmobranch		**7.5**	**0.2**	**3.7**	**32.9**			**0.4**	**8.3**	**7.1**		
Alaska plaice	32.1	183.1	2.5	394.4	200.0	16.5	4.4	16.8	11.7	95.5	9.2	1.7
Arrowtooth flounder												
Flathead sole	0.2	0.4	0.3	0.8	0.3	0.7	0.9	0.3	0.4	2.9	0.1	0.1
Greenland turbot												
Pacific halibut									1.5			
Rock sole	17.9	15.2	41.1	1.5	6.8	7.7	0.6	2.5	12.3	3.9		
Yellowfin sole	219.3	39.4	194.9	134.2	22.9	66.8	9.1	14.7	118.0	172.7	2.3	0.2
Other flatfish	0.2	0.3	0.4	0.1	0.5	0.3	0.2	2.2	0.7	4.8	32.8	2.5
Total flatfish	**269.4**	**57.9**	**436.9**	**539.1**	**427.7**	**235.4**	**14.3**	**35.5**	**242.0**	**275.8**	**43.5**	**4.4**
Walleye pollock	0.9	3.2	7.4	14.3	12.0	3.4	5.9		6.6	2.6	0.2	
Pacific cod	7.9	6.8				2.7	0.2			12.5	0.1	0.1
Sablefish												
Atka mackerel												
Eelpouts							0.2		5.5			
Pacific herring						0.1			0.7	5.9		
Pacific ocean perch												
Sculpins	6.8	14.3	31.9	6.3	7.9	11.1	6.7	12.8	21.6	3.7	0.8	124.6
Other rockfish												
Other roundfish	0.8	0.6	6.9	1.2	5.3	0.7	11.3	89.9	3.4	2.2	0.2	2.6
Total roundfish	**15.5**	**24.7**	**46.1**	**21.5**	**25.1**	**17.8**	**24.2**	**12.7**	**37.7**	**71.9**	**1.2**	**127.2**
Blue king crab						1.4		0.8	1.3		0.9	7.9
Red king crab												
Tanner crab, bairdi												
Tanner crab, opilio	0.4	0.2	5.9	1.6	12.2	82.9	13.5	45.5	19.4	174.9	0.9	34.5
Other crab	35.9	75.6	14.6	173.6	92.9	11.9	146.8	131.7	68.6	22.0	17.7	88.8
Shrimp	0.4	0.2	0.8	0.3	0.2	0.2	1.7	0.1	0.2		0.2	3.8
Octopus												
Squids												
Snails	28.0	14.9	166.3	77.4	91.5	15.9	71.7	163.2	52.6	8.6	25.9	56.9
Starfish	26.7	545.9	96.6	56.2	53.3	8.4	63.8	185.6	47.7	74.6	26.9	37.6
Other invertebrates	25.7	88.4	69.8	42.9	28.3	3.5	239.2	199.9	635.4	64.2	32.9	435.4
Total invertebrates	**116.2**	**815.3**	**478.7**	**351.6**	**368.3**	**123.8**	**652.9**	**726.8**	**826.0**	**344.2**	**15.1**	**664.1**
Miscellaneous	19.5	28.6	5.5	112.9	53.1	2.9	46.9	6.7	27.3	0.6	9.4	84.2
Total catch	**42.9**	**1384.4**	**112.8**	**156.6**	**97.4**	**38.6**	**737.6**	**872.0**	**114.7**	**71.6**	**159.2**	**880.0**

Appendix A Table 3. -- Continued.

Station	**BB-20**	**BB-21**	**BB-22**	**AA-22**	**AA-23**	**CC-20**	**CC-19**	**CC-18**	**BB-18**	**BB-01**	**CC-01**	**DD-01**
Start date and time	7/29/10 7:21	7/29/10 10:15	7/29/10 13:10	7/29/10 15:53	7/29/10 18:14	7/30/10 10:12	7/30/10 13:13	7/30/10 15:55	7/30/10 18:39	7/31/10 7:11	7/31/10 12:01	7/31/10 16:11
Haul number	24	25	26	27	28	30	31	32	33	34	35	36
Start latitude	6359.01	6400.76	6359.17	6342.00	6340.56	6420.24	6418.55	6418.32	6401.15	6358.68	6420.57	6440.12
Start longitude	17126.30	17239.50	17356.80	17356.33	17317.12	17124.17	17010.25	17052.51	17057.10	16941.99	16940.48	16938.16
End latitude	6400.50	6359.66	6400.66	6341.25	6339.62	6419.23	6420.02	6419.71	6359.73	6400.16	6419.17	6438.78
End longitude	17126.64	17241.84	17356.43	17356.28	17314.49	17121.77	17009.12	17054.09	17056.52	16941.82	16939.36	16939.63
Bottom depth (m)	28	28	52	36	55	36	38	39	34	35	38	38
Duration (h)	0.51	0.51	0.51	0.28	0.49	0.48	0.53	0.51	0.50	0.51	0.52	0.52
Distance fished (km)	2.79	2.80	2.77	1.40	2.78	2.70	2.88	2.88	2.67	2.75	2.74	2.75
Net width (m)	15.30	15.34	16.86	17.11	16.94	15.57	16.07	15.93	15.58	15.39	15.47	15.51
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	6	6	1	0	6	0	0	0	5	5	5
Alaska skates												
Other skates												
Sharks												
Total elasmobranch												
Alaska plaice	0.8	15.2	5.5	4.7	25.6	14.5	0.5	47.8	48.7	139.7	34.1	26.3
Arrowtooth flounder												
Flathead sole		0.2			2.1		0.1	0.5	1.0	1.1	0.6	0.2
Greenland turbot												
Pacific halibut					1.8							
Rock sole		0.4							0.8	7.4	22.4	6.5
Yellowfin sole	0.5			0.5	2.8				1.8	54.9	32.2	5.8
Other flatfish	0.1	0.3			0.6		0.3		0.5	3.4	0.9	3.6
Total flatfish	**1.2**	**15.5**	**5.5**	**5.1**	**3.9**	**14.5**	**0.5**	**47.8**	**6.4**	**23.9**	**89.6**	**41.7**
Walleye pollock										41.2	46.9	23.7
Pacific cod	0.9	0.8	8.0			0.1			15.2	18.1	16.2	21.8
Sablefish												
Atka mackerel												
Eelpouts								0.2	0.3	0.6	1.8	
Pacific herring								12.6		143.9	6.6	0.3
Pacific ocean perch												
Sculpins	38.6	116.6	9.5	8.2	0.2	46.2	22.9	38.5	6.2	7.4	6.5	11.2
Other rockfish												
Other roundfish	1.7	3.2	0.4	0.4	1.0	4.5	0.5	2.2	0.4	25.4	2.8	1.8
Total roundfish	**41.2**	**119.7**	**8.9**	**8.5**	**1.1**	**5.8**	**23.5**	**143.4**	**21.6**	**236.6**	**8.3**	**58.8**
Blue king crab	7.0	6.0	4.9	1.3		1.2				0.5		1.3
Red king crab												
Tanner crab, bairdi					0.2							
Tanner crab, opilio	13.2	156.9	29.2	1.2	6.3	42.4	18.0	1.7	1.2	59.6	12.2	31.2
Other crab	8.5	64.9	22.2	19.4	11.2	33.3	12.8	43.7	29.6	14.3	33.8	67.4
Shrimp	3.3	0.2	0.4	0.6	0.3	0.3		0.1	0.4	1.8	1.3	3.2
Octopus												
Squids												
Snails	14.5	32.0	1.9	5.7	6.8	17.9	3.4	2.9	6.2	162.2	22.4	46.5
Starfish	36.4	5.6	11.2	5.1	1.4	12.4	6.7	19.4	24.3	48.6	18.5	37.3
Other invertebrates	731.9	161.8	1392.8	61.8	1.9	385.5	3.9	16.3	12.5	18.9	33.6	56.3
Total invertebrates	**976.4**	**426.4**	**1461.1**	**93.5**	**27.9**	**492.7**	**44.8**	**183.3**	**136.9**	**35.8**	**121.7**	**242.9**
Miscellaneous	14.2	37.6	1.6		0.9	15.2	1.8	14.2	8.8	24.5	9.3	35.9
Total catch	**132.9**	**599.4**	**1549.0**	**17.1**	**61.3**	**573.3**	**7.8**	**388.7**	**227.9**	**771.5**	**4.0**	**379.5**

Appendix A Table 3. -- Continued.

Station	**DD-20**	**DD-19**	**DD-18**	**EE-18**	**EE-19**	**FF-01**	**FF-02**	**EE-02**	**EE-01**	**DD-02**	**DD-03**	**CC-03**
Start date and time	8/1/10 7:12	8/1/10 9:53	8/1/10 12:46	8/1/10 15:40	8/1/10 18:26	8/2/10 10:10	8/2/10 13:23	8/2/10 16:51	8/3/10 7:08	8/3/10 10:39	8/3/10 13:34	8/3/10 17:35
Haul number	37	38	39	40	41	43	44	45	46	47	48	49
Start latitude	6438.25	6440.72	6438.53	6501.45	6500.93	6519.62	6518.87	6500.28	6500.61	6441.09	6439.00	6419.62
Start longitude	17122.94	17005.81	17048.91	17053.83	17006.60	16934.39	16806.55	16823.10	16939.32	16823.56	16710.54	16711.09
End latitude	6436.85	6439.41	6439.63	6500.42	6459.91	6520.42	6519.07	6501.69	6459.18	6439.66	6440.50	6420.99
End longitude	17124.56	17007.37	17051.54	17051.12	17003.61	16934.65	16802.98	16821.45	16939.18	16823.63	16709.57	16709.89
Bottom depth (m)	47	46	42	48	49	53	38	33	45	31	26	30
Duration (h)	0.53	0.51	0.53	0.54	0.54	0.28	0.52	0.51	0.50	0.51	0.51	0.51
Distance fished (km)	2.90	2.73	2.92	2.87	3.01	1.50	2.81	2.92	2.66	2.65	2.90	2.72
Net width (m)	16.29	16.18	16.58	16.72	16.37	17.56	16.81	15.58	16.43	15.80	15.71	15.75
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	5	5	5	5	5	1	0	6	0	0	0	0
Alaska skates												
Other skates												
Sharks												
Total elasmobranch												
Alaska plaice	24.4	16.3	1.1	1.9	6.2	4.1	1.7	0.2	48.3	8.6	16.9	6.3
Arrowtooth flounder												
Flathead sole	2.3	6.5	0.9	0.9	1.7	1.6		0.2	2.5	0.2	0.4	0.1
Greenland turbot												
Pacific halibut									1.8			
Rock sole						0.6	0.9	1.6		4.3	8.1	36.2
Yellowfin sole							0.4	0.2	12.1	0.4	0.4	1.9
Other flatfish	0.5	0.2	0.2		0.9	4.4	15.7	42.5	1.5	15.9	12.4	0.1
Total flatfish	**24.5**	**16.3**	**1.3**	**1.9**	**6.3**	**8.6**	**18.5**	**53.5**	**63.7**	**29.2**	**37.8**	**44.4**
Walleye pollock	4.5		0.1	18.3	5.4	6.3		0.2	91.3			2.8
Pacific cod	41.4	88.1	63.5	122.1	19.7	21.5			87.4			
Sablefish												
Atka mackerel												
Eelpouts		0.2	0.5		0.2			0.2			0.8	
Pacific herring		188.1	33.8	1.8	0.7	2.2			1.9			
Pacific ocean perch												
Sculpins	9.4	227.5	29.0	211.3	37.0	12.5	1.4	18.1	25.4	5.9	67.8	22.3
Other rockfish												
Other roundfish	1.0	0.9	2.2	3.3	1.9	1.6	4.4	1.2	4.6	0.2	5.3	99.2
Total roundfish	**56.4**	**54.9**	**38.9**	**365.9**	**64.8**	**43.4**	**5.8**	**19.5**	**21.7**	**6.1**	**118.2**	**124.2**
Blue king crab	0.6	0.3	1.5		2.2	2.5	0.5	5.2	1.3	1.3	4.4	1.8
Red king crab											0.8	
Tanner crab, bairdi												
Tanner crab, opilio	41.7	14.2	62.4	64.5	96.5	3.2	4.1	0.9	15.5	19.9	0.4	0.5
Other crab	122.2	57.4	32.3	22.3	61.5	4.8	2.0	27.2	81.3	37.6	25.9	798.3
Shrimp	0.4	1.2	0.8	0.3	0.7	0.9	0.2	1.2	4.5	0.5	7.3	14.4
Octopus												
Squids												
Snails	5.2	11.7	28.8	38.6	3.2	36.3	2.4	15.9	26.4	1.8	4.6	2.6
Starfish	143.8	36.2	34.5	52.2	53.5	13.9	371.4	487.0	31.7	182.0	59.9	45.9
Other invertebrates	14.6	331.6	8.3	18.3	93.4	26.4	92.4	4265.2	42.9	47.6	895.3	458.0
Total invertebrates	**741.9**	**542.3**	**167.5**	**195.5**	**337.5**	**122.3**	**481.5**	**482.6**	**23.3**	**65.4**	**998.4**	**1726.5**
Miscellaneous	26.6	6.9	5.7	2.9	2.7	6.9	4.6	13.9	4.7	12.4	8.8	1.8
Total catch	**851.7**	**175.9**	**565.3**	**567.9**	**413.2**	**182.7**	**51.2**	**4889.5**	**484.8**	**698.2**	**1163.3**	**1897.0**

Appendix A Table 3. -- Continued.

Station	**CC-02**	**BB-02**	**BB-03**	**AA-03**	**ZZ-03**	**Y-03**	**Y-04**	**ZZ-04**	**ZZ-05**	**AA-05**	**AA-04**	**BB-04**
Start date and time	8/4/10 7:18	8/4/10 10:12	8/4/10 13:13	8/4/10 16:02	8/4/10 18:42	8/5/10 7:08	8/5/10 10:06	8/5/10 12:48	8/5/10 15:44	8/5/10 18:13	8/6/10 7:02	8/6/10 9:38
Haul number	50	51	52	53	54	55	56	57	58	59	60	61
Start latitude	6420.79	6400.99	6400.03	6340.66	6321.67	6300.54	6258.43	6319.44	6319.71	6339.06	6339.04	6358.96
Start longitude	16825.59	16826.27	16712.62	16712.94	16713.99	16715.51	16758.39	16757.89	16641.59	16642.06	16757.60	16758.26
End latitude	6419.30	6402.44	6400.36	6339.13	6320.15	6259.23	6300.07	6320.90	6321.17	6340.51	6340.50	6400.30
End longitude	16825.37	16825.95	16709.23	16713.32	16714.17	16713.86	16758.48	16758.32	16642.90	16642.11	16757.41	16756.68
Bottom depth (m)	32	35	33	30	27	28	21	24	15	18	26	24
Duration (h)	0.51	0.51	0.51	0.53	0.51	0.51	0.53	0.52	0.49	0.50	0.49	0.50
Distance fished (km)	2.77	2.71	2.84	2.85	2.82	2.80	3.04	2.73	2.93	2.69	2.70	2.81
Net width (m)	15.10	14.90	15.83	15.68	15.61	16.01	15.80	15.62	16.32	15.73	15.38	15.35
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	0	0	0	0
Alaska skates				8.3	26.5	353.2	1.6	31.6			56.0	7.8
Other skates												
Sharks												
Total elasmobranch				**8.3**	**26.5**	**353.2**	**1.6**	**31.6**			**56.0**	**7.8**
Alaska plaice	0.6	38.9	3.1	24.7	88.8	74.4	28.8	25.3	3.7	6.6	16.5	3.4
Arrowtooth flounder												
Flathead sole		0.3		0.3	0.2	0.2		0.4			0.2	0.5
Greenland turbot												
Pacific halibut						15.7	28.5	11.5	3.3	19.0	33.6	8.4
Rock sole	3.5	6.3	2.4	12.4	34.5	3.9		2.3			6.6	15.1
Yellowfin sole	1.8	27.5	5.2	22.8	172.8	82.6	219.4	37.8	7.6	51.3	2.8	6.2
Other flatfish	2.9	0.5	2.0	6.7	18.0	2.3	1.4	2.3	39.2	37.6	4.7	11.2
Total flatfish	**8.4**	**72.8**	**11.8**	**65.6**	**314.0**	**178.2**	**278.4**	**79.6**	**53.2**	**113.9**	**82.1**	**71.2**
Walleye pollock	2.7	3.3	25.6	3.0	8.5	1.6	0.3	0.4			9.6	2.9
Pacific cod	6.4					15.6	0.2	6.0	4.5		11.9	
Sablefish												
Atka mackerel												
Eelpouts	0.1	0.4	0.6	0.2		0.5			0.5	0.6		
Pacific herring	0.2			8.2	0.5		0.4		0.7	0.2		
Pacific ocean perch												
Sculpins	18.9	15.3	2.9	4.2	14.2	2.6	44.0	4.5	3.8	64.8	23.9	21.2
Other rockfish												
Other roundfish	0.8	35.7	5.3	1.6	14.5	85.4	195.0	1.7	33.1	167.5	48.6	9.8
Total roundfish	**29.9**	**54.7**	**34.4**	**17.1**	**37.7**	**897.1**	**239.9**	**57.2**	**41.5**	**232.5**	**94.0**	**33.9**
Blue king crab	3.8		0.7				2.3		0.4			
Red king crab										4.7		1.1
Tanner crab, bairdi												
Tanner crab, opilio	81.6	36.6	14.1	12.3	0.2	0.4		0.2			7.4	9.3
Other crab	95.7	247.4	78.2	156.5	153.1	75.9	17.3	23.9	1.4	3.2	219.8	8.3
Shrimp	2.0	0.7	0.5	0.7	0.3		0.4	0.2	0.8	0.4	1.8	2.3
Octopus												
Squids												
Snails	0.4	279.6	0.2	15.9	75.8	25.7	5.2	53.7	0.2			0.6
Starfish	21.8	187.8	193.7	99.9	35.3	15.9	162.9	126.4	6.9	87.9	33.9	249.0
Other invertebrates	36.8	150.0	145.2	58.1	21.5	4.5	26.2	36.6	3.2	2.8	11.2	88.4
Total invertebrates	**744.6**	**91.6**	**432.7**	**793.3**	**6.4**	**247.9**	**213.5**	**24.9**	**12.8**	**99.0**	**669.4**	**358.2**
Miscellaneous	34.6	76.3	22.3	49.8	18.1	57.0	9.1	1.7	0.9	0.7	173.7	0.6
Total catch	**816.7**	**115.1**	**51.2**	**934.5**	**187.4**	**1732.5**	**751.2**	**41.5**	**17.7**	**446.1**	**175.4**	**471.7**

Appendix A Table 3. -- Continued.

Station	**BB-05**	**BB-06**	**AA-06**	**BB-07**	**AA-07**	**AA-08**	**BB-08**	**BB-09**	**AA-10**	**BB-10**	**CC-10**	**CC-09**
Start date and time	8/6/10 12:30	8/6/10 15:25	8/6/10 18:02	8/7/10 7:10	8/7/10 9:52	8/7/10 12:46	8/7/10 15:20	8/7/10 18:05	8/8/10 7:04	8/8/10 9:29	8/8/10 12:05	8/8/10 15:19
Haul number	62	63	64	65	66	67	68	69	70	71	72	73
Start latitude	6359.45	6400.23	6341.33	6400.56	6340.06	6339.01	6359.31	6401.12	6339.15	6358.70	6418.02	6420.85
Start longitude	16640.19	16526.57	16526.52	16412.06	16408.94	16456.11	16457.03	16341.88	16225.91	16228.73	16228.13	16345.39
End latitude	6400.30	6359.20	6339.74	6359.04	6340.01	6340.58	6400.86	6359.58	6339.82	6359.99	6419.15	6419.61
End longitude	16642.86	16529.32	16526.96	16412.41	16412.13	16456.13	16457.04	16342.34	16225.82	16226.83	16225.77	16343.50
Bottom depth (m)	18	18	11	20	15	15	18	18	15	18	14	19
Duration (h)	0.51	0.52	0.52	0.51	0.52	0.53	0.52	0.52	0.25	0.52	0.51	0.50
Distance fished (km)	2.70	2.94	2.98	2.85	2.65	2.90	2.88	2.87	1.24	2.85	2.83	2.77
Net width (m)	15.55	15.48	15.20	15.68	14.76	15.35	15.36	14.89	15.24	15.68	15.27	15.98
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Performance	0	0	0	0	0	0	0	0	4	0	0	4
Alaska skates												
Other skates												
Sharks												
Total elasmobranch												
Alaska plaice	5.9	1.5	2.3	3.4	6.4	0.9	2.8	2.1	3.6	0.2	3.2	0.1
Arrowtooth flounder												
Flathead sole				0.2						0.5		
Greenland turbot												
Pacific halibut	1.9		1.2									
Rock sole		0.6										
Yellowfin sole	12.8	5.5	0.6	5.8	1.3	8.5	1.8	2.3	3.4	0.2	3.7	0.4
Other flatfish	2.6	28.0	33.5	12.2	1.9	9.0	0.2	0.2	2.4		12.8	0.4
Total flatfish	**49.7**	**35.5**	**37.3**	**21.4**	**18.6**	**18.4**	**4.7**	**4.3**	**9.4**	**0.4**	**19.7**	**0.9**
Walleye pollock	0.3		0.2									
Pacific cod												
Sablefish												
Atka mackerel												
Eelpouts		0.5		1.3	3.0	4.7	0.8	0.5	5.4	0.8	0.4	1.2
Pacific herring	2.4	0.8	0.2		0.7	0.3	1.6	0.5	0.7		4.9	
Pacific ocean perch												
Sculpins	3.8	12.1	3.4	0.8	11.6	4.2	1.9	4.2	2.3	2.5	3.2	1.0
Other rockfish												
Other roundfish	52.2	2.0	15.4	25.0	82.7	38.8	16.2	35.7	19.6	135.6	155.0	25.7
Total roundfish	**85.4**	**22.4**	**18.9**	**26.8**	**96.7**	**48.1**	**2.5**	**4.8**	**27.3**	**138.8**	**163.4**	**27.7**
Blue king crab												
Red king crab	6.5	2.4		4.6	1.3	0.8	3.4	1.4	0.7	0.9	0.6	1.2
Tanner crab, bairdi												
Tanner crab, opilio	0.4	0.1	0.8	0.4								
Other crab	0.4	3.3	0.5	11.3	14.6	3.7	19.8	8.8	3.5	8.7	2.6	25.2
Shrimp	0.2	0.1	0.1	0.2	0.4	3.1	0.1	0.3	0.4	0.5	0.6	0.5
Octopus												
Squids												
Snails		8.6	0.2	16.6	6.2	18.3	14.0	25.4	53.0	46.6	3.9	67.5
Starfish	72.6	16.2	8.7	117.5	141.2	11.4	419.5	271.5	62.5	52.7	231.5	98.8
Other invertebrates	16.9	20.0	9.8	5.9	22.9	16.0	17.2	31.7	2.4	16.2	3.4	7.6
Total invertebrates	**96.7**	**14.7**	**19.2**	**155.7**	**186.6**	**142.6**	**474.0**	**339.2**	**166.9**	**592.8**	**314.5**	**2.4**
Miscellaneous	0.4	16.9	0.1	13.9	18.9	11.1	12.6	2.3	47.0	28.7	32.9	71.2
Total catch	**231.8**	**215.4**	**75.6**	**217.8**	**32.7**	**22.2**	**511.8**	**44.4**	**25.6**	**76.7**	**53.4**	**3.2**

Appendix A Table 3. -- Continued.

Station	**CC-08**	**CC-07**	**CC-06**	**CC-05**	**CC-04**	**X-03**	**W-03**	**V-03**
Start date and time	8/8/10 17:59	8/8/10 20:42	8/9/10 7:05	8/9/10 9:57	8/9/10 12:37	8/10/10 8:22	8/10/10 11:28	8/10/10 13:58
Haul number	74	75	76	77	78	79	81	82
Start latitude	6418.96	6419.52	6419.18	6419.25	6419.79	6240.76	6220.91	6201.56
Start longitude	16459.96	16414.27	16530.18	16642.76	16759.25	16716.38	16716.60	16718.28
End latitude	6418.83	6420.48	6419.97	6419.63	6420.02	6239.37	6219.24	6200.06
End longitude	16456.50	16411.50	16526.93	16639.42	16755.89	16715.25	16717.07	16717.76
Bottom depth (m)	14	17	15	24	23	26	21	21
Duration (h)	0.53	0.51	0.52	0.50	0.51	0.51	0.54	0.51
Distance fished (km)	2.81	2.86	3.00	2.79	2.75	2.75	3.14	2.81
Net width (m)	15.54	16.32	15.37	15.80	15.73	15.25	15.53	16.07
Net measured?	Y	Y	Y	Y	Y	Y	Y	Y
Performance	2	6	0	0	0	0	0	0
Alaska skates						198.9	15.7	83.7
Other skates								
Sharks								
Total elasmobranch						**198.9**	**15.7**	**83.7**
Alaska plaice	0.3	1.6	31.7	6.7	13.6	9.3	25.6	11.3
Arrowtooth flounder								
Flathead sole		0.2		0.2	1.0			
Greenland turbot								
Pacific halibut				8.4		4.8	8.7	45.6
Rock sole					1.4	2.2		
Yellowfin sole	0.9	9.7	47.2	8.3	2.5	112.8	177.2	121.4
Other flatfish	3.4	13.8	25.3	6.6	3.7	2.3	1.2	1.1
Total flatfish	**3.8**	**25.0**	**13.6**	**3.5**	**48.2**	**166.6**	**212.6**	**179.4**
Walleye pollock						7.2	3.4	2.5
Pacific cod							0.3	9.3
Sablefish								
Atka mackerel								
Eelpouts		1.7		2.2	0.4			
Pacific herring			1.0	0.2	1.6	0.3	7.1	0.5
Pacific ocean perch								
Sculpins	0.5	1.8	11.6	2.8	15.0	25.3	13.0	12.3
Other rockfish								
Other roundfish	5.8	14.8	26.4	51.6	27.3	458.6	93.0	57.6
Total roundfish	**6.4**	**18.3**	**37.7**	**74.8**	**43.6**	**491.3**	**116.5**	**81.8**
Blue king crab								
Red king crab		2.3	2.4	26.9	2.3		1.0	
Tanner crab, bairdi								
Tanner crab, opilio		1.1		3.9	0.6	0.3		
Other crab	2.6	1.6	28.6	15.9	0.5	32.7	55.7	19.9
Shrimp	0.6	0.3	2.9	1.7	1.2	0.6		0.3
Octopus								
Squids								
Snails	0.2	35.5	0.4	0.1	0.2	7.8	1.4	
Starfish	47.9	173.8	362.4	213.7	138.2	236.1	134.1	138.5
Other invertebrates	27.9	27.2	12.2	2.2	5.2	27.3	9.6	1.3
Total invertebrates	**78.6**	**25.7**	**48.4**	**281.3**	**148.7**	**33.9**	**21.7**	**159.2**
Miscellaneous	0.4	21.4	0.7	2.8	0.7	16.1	9.8	0.2
Total catch	**88.9**	**315.5**	**55.3**	**388.5**	**24.6**	**1176.8**	**556.3**	**54.1**

Appendix B: Rank Order of Relative Abundance of Fishes and Invertebrates

Appendix B ranks all fishes and invertebrates identified during the 2010 eastern and northern Bering Sea continental shelf bottom trawl survey by descending weighted CPUE (kg/ha).

List of Tables

Appendix B Table 1 -- Rank order of relative abundance of fishes and invertebrates for the eastern Bering Sea continental shelf.

Appendix B Table 2 -- Rank order of relative abundance of fishes and invertebrates for the northern Bering Sea continental shelf.

Appendix B Table 1. -- Rank of fish and invertebrate taxa by weighted total CPUE (kg/ha) from the 2010 eastern Bering Sea shelf bottom trawl survey.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
1	21740	75.8348	28.5955	65.3538	86.3159	0.2429	0.2429	*Theragra chalcogramma*
2	10210	48.0393	13.3743	40.8714	55.2072	0.1539	0.3968	*Limanda aspera*
3	10260	41.7697	4.4115	37.6530	45.8864	0.1338	0.5306	*Lepidopsetta* spp.
4	21720	17.6522	1.4081	15.3263	19.9780	0.0565	0.5871	*Gadus macrocephalus*
5	81742	16.7240	0.5289	15.2986	18.1494	0.0536	0.6407	*Asterias amurensis*
6	10110	10.7257	0.3888	9.5035	11.9479	0.0344	0.6751	*Atheresthes stomias*
7	10285	10.1037	0.3720	8.9083	11.2991	0.0324	0.7074	*Pleuronectes quadrituberculatus*
8	10130	9.9161	0.5477	8.4655	11.3667	0.0318	0.7392	*Hippoglossoides elassodon*
9	68580	8.9441	4.3580	4.8524	13.0357	0.0286	0.7678	*Chionoecetes opilio*
10	471	7.4278	0.1707	6.6181	8.2375	0.0238	0.7916	*Bathyraja parmifera*
11	83020	5.9969	0.4806	4.6380	7.3557	0.0192	0.8108	*Gorgonocephalus eucnemis*
12	98082	4.1283	0.2331	3.1820	5.0746	0.0132	0.8241	*Styela rustica*
13	10120	4.0242	0.0453	3.6072	4.4411	0.0129	0.8370	*Hippoglossus stenolepis*
14	98205	3.8324	0.2390	2.8742	4.7905	0.0123	0.8492	*Halocynthia aurantium*
15	40504	3.6538	0.0396	3.2640	4.0436	0.0117	0.8609	*Chrysaora melanaster*
16	91000	3.5187	0.7511	1.8200	5.2173	0.0113	0.8722	Porifera
17	99994	3.1989	0.0285	2.8677	3.5300	0.0102	0.8825	empty gastropod shells
18	98105	2.2844	0.1534	1.5166	3.0522	0.0073	0.8898	*Boltenia ovifera*
19	69086	2.1588	0.0182	1.8947	2.4229	0.0069	0.8967	*Pagurus trigonocheirus*
20	10220	1.6302	0.0650	1.1305	2.1299	0.0052	0.9019	*Platichthys stellatus*
21	81780	1.6068	0.0692	1.0911	2.1226	0.0051	0.9071	*Ctenodiscus crispatus*
22	71820	1.4667	0.0137	1.2372	1.6962	0.0047	0.9118	*Neptunea pribiloffensis*
23	69322	1.3272	0.0265	1.0083	1.6461	0.0043	0.9160	*Paralithodes camtschaticus*
24	68560	1.2974	0.0201	1.0198	1.5749	0.0042	0.9202	*Chionoecetes bairdi*
25	10112	1.1825	0.0121	0.9667	1.3983	0.0038	0.9239	*Atheresthes evermanni*
26	21371	1.1185	0.0101	0.9215	1.3155	0.0036	0.9275	*Myoxocephalus jaok*
27	71884	1.1117	0.0378	0.7308	1.4926	0.0036	0.9311	*Neptunea heros*
28	69060	1.0358	0.0063	0.8806	1.1909	0.0033	0.9344	*Pagurus aleuticus*
29	21370	1.0069	0.0064	0.8498	1.1639	0.0032	0.9376	*Myoxocephalus polyacanthocephalus*
30	71870	0.9205	0.0042	0.7930	1.0480	0.0029	0.9406	*Neptunea lyrata*
31	80590	0.8700	0.0065	0.7125	1.0275	0.0028	0.9434	*Leptasterias polaris*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
32	43090	0.8379	0.0205	0.5576	1.1182	0.0027	0.9461	*Liponema brevicornis*
33	82510	0.7295	0.0345	0.3655	1.0934	0.0023	0.9484	*Strongylocentrotus droebachiensis*
34	43021	0.7131	0.0104	0.5132	0.9130	0.0023	0.9507	*Metridium farcimen*
35	21110	0.6938	0.4008	0.0000	1.9346	0.0022	0.9529	*Clupea pallasi*
36	98310	0.6712	0.0044	0.5412	0.8012	0.0022	0.9550	*Aplidium* sp.
37	21420	0.6589	0.0021	0.5687	0.7491	0.0021	0.9572	*Hemitripterus bolini*
38	68577	0.5798	0.0035	0.4635	0.6961	0.0019	0.9590	*Hyas coarctatus*
39	71882	0.4999	0.0018	0.4163	0.5835	0.0016	0.9606	*Neptunea ventricosa*
40	72500	0.4936	0.0030	0.3867	0.6006	0.0016	0.9622	*Fusitriton oregonensis*
41	10115	0.4750	0.0045	0.3437	0.6063	0.0015	0.9637	*Reinhardtius hippoglossoides*
42	69042	0.4706	0.0043	0.3423	0.5990	0.0015	0.9652	*Pagurus brandti*
43	21725	0.4651	0.0130	0.2421	0.6882	0.0015	0.9667	*Boreogadus saida*
44	21347	0.4366	0.0084	0.2574	0.6157	0.0014	0.9681	*Hemilepidotus jordani*
45	24191	0.4256	0.0185	0.1588	0.6923	0.0014	0.9695	*Lycodes brevipes*
46	10200	0.4123	0.0233	0.1130	0.7116	0.0013	0.9708	*Glyptocephalus zachirus*
47	69095	0.3976	0.0014	0.3243	0.4708	0.0013	0.9721	*Pagurus rathbuni*
48	83320	0.3941	0.0047	0.2598	0.5284	0.0013	0.9733	*Ophiura sarsi*
49	69120	0.3939	0.0055	0.2489	0.5390	0.0013	0.9746	*Pagurus capillatus*
50	71001	0.3720	0.0067	0.2113	0.5326	0.0012	0.9758	gastropod eggs
51	20040	0.3701	0.0007	0.3191	0.4210	0.0012	0.9770	*Podothecus accipenserinus*
52	71753	0.2859	0.0018	0.2023	0.3695	0.0009	0.9779	*Pyrulofusus deformis*
53	69323	0.2698	0.0032	0.1581	0.3814	0.0009	0.9788	*Paralithodes platypus*
54	69035	0.2673	0.0010	0.2041	0.3304	0.0009	0.9796	*Pagurus* sp.
55	99993	0.2516	0.0015	0.1749	0.3284	0.0008	0.9804	empty bivalve shells
56	435	0.2433	0.0030	0.1355	0.3511	0.0008	0.9812	*Bathyraja interrupta*
57	10140	0.2405	0.0042	0.1127	0.3682	0.0008	0.9820	*Hippoglossoides robustus*
58	69090	0.2359	0.0008	0.1801	0.2916	0.0008	0.9827	*Pagurus ochotensis*
59	10211	0.2345	0.0048	0.0989	0.3701	0.0008	0.9835	*Limanda proboscidea*
60	85201	0.2197	0.0030	0.1116	0.3277	0.0007	0.9842	*Cucumaria fallax*
61	69070	0.2140	0.0003	0.1808	0.2472	0.0007	0.9849	*Pagurus confragosus*
62	80200	0.1944	0.0002	0.1692	0.2195	0.0006	0.9855	*Lethasterias nanimensis*
63	43010	0.1893	0.0019	0.1031	0.2754	0.0006	0.9861	*Metridium* sp.

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
64	80020	0.1845	0.0012	0.1175	0.2515	0.0006	0.9867	*Evasterias echinosoma*
65	66031	0.1738	0.0015	0.0972	0.2504	0.0006	0.9872	*Pandalus eous*
66	82511	0.1605	0.0084	0.0000	0.3403	0.0005	0.9878	*Strongylocentrotus* sp.
67	72752	0.1510	0.0006	0.1045	0.1974	0.0005	0.9882	*Buccinum scalariforme*
68	21368	0.1418	0.0003	0.1073	0.1763	0.0005	0.9887	*Myoxocephalus verrucosus*
69	24185	0.1345	0.0006	0.0874	0.1815	0.0004	0.9891	*Lycodes palearis*
70	72755	0.1323	0.0004	0.0932	0.1715	0.0004	0.9895	*Buccinum polare*
71	80594	0.1204	0.0003	0.0868	0.1540	0.0004	0.9899	*Leptasterias arctica*
72	68590	0.1146	0.0003	0.0785	0.1507	0.0004	0.9903	*Chionoecetes* hybrid
73	71750	0.1124	0.0002	0.0849	0.1399	0.0004	0.9907	*Volutopsius* sp.
74	23041	0.1079	0.0003	0.0725	0.1432	0.0003	0.9910	*Mallotus villosus*
75	320	0.1075	0.0008	0.0536	0.1615	0.0003	0.9913	*Somniosus pacificus*
76	72743	0.1028	0.0004	0.0617	0.1439	0.0003	0.9917	*Buccinum angulosum*
77	82740	0.1026	0.0015	0.0264	0.1788	0.0003	0.9920	*Echinarachnius parma*
78	23010	0.0938	0.0011	0.0287	0.1590	0.0003	0.9923	*Thaleichthys pacificus*
79	69061	0.0931	0.0002	0.0647	0.1215	0.0003	0.9926	*Labidochirus splendescens*
80	99999	0.0773	0.0012	0.0090	0.1457	0.0002	0.9928	unsorted shab
81	71761	0.0717	0.0008	0.0159	0.1276	0.0002	0.9931	*Pyrulofusus melonis*
82	68578	0.0705	<0.0001	0.0569	0.0841	0.0002	0.9933	*Hyas lyratus*
83	71769	0.0704	<0.0001	0.0521	0.0886	0.0002	0.9935	*Beringius* sp.
84	420	0.0699	0.0005	0.0266	0.1132	0.0002	0.9938	*Raja binoculata*
85	69400	0.0681	0.0001	0.0479	0.0883	0.0002	0.9940	*Erimacrus isenbeckii*
86	72740	0.0677	0.0003	0.0338	0.1017	0.0002	0.9942	*Buccinum* sp.
87	472	0.0676	0.0005	0.0224	0.1129	0.0002	0.9944	*Bathyraja aleutica*
88	43000	0.0599	0.0003	0.0254	0.0945	0.0002	0.9946	Actiniaria
89	20720	0.0570	0.0001	0.0351	0.0788	0.0002	0.9948	*Bathymaster signatus*
90	24184	0.0539	0.0038	0.0000	0.1753	0.0002	0.9950	*Lycodes raridens*
91	22205	0.0529	<0.0001	0.0384	0.0675	0.0002	0.9951	*Liparis gibbus*
92	21438	0.0484	0.0002	0.0224	0.0744	0.0002	0.9953	*Icelus spiniger*
93	71886	0.0453	0.0002	0.0206	0.0701	0.0001	0.9954	*Clinopegma magnum*
94	50192	0.0430	<0.0001	0.0240	0.0620	0.0001	0.9956	*Aphrodita negligens*
95	71756	0.0407	0.0001	0.0205	0.0610	0.0001	0.9957	*Volutopsius fragilis*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
96	69121	0.0399	<0.0001	0.0253	0.0546	0.0001	0.9958	*Elassochirus cavimanus*
97	21316	0.0397	0.0002	0.0131	0.0663	0.0001	0.9959	*Gymnocanthus galeatus*
98	95000	0.0392	0.0004	0.0000	0.0800	0.0001	0.9961	Bryozoa
99	41221	0.0391	<0.0001	0.0234	0.0547	0.0001	0.9962	*Gersemia rubiformis*
100	42003	0.0367	0.0007	0.0000	0.0876	0.0001	0.9963	Virgulariidae
101	43032	0.0359	<0.0001	0.0192	0.0527	0.0001	0.9964	*Stomphia coccinea*
102	10270	0.0354	0.0003	0.0000	0.0716	0.0001	0.9965	*Isopsetta isolepis*
103	81355	0.0334	<0.0001	0.0209	0.0460	0.0001	0.9967	*Pteraster obscurus*
104	74120	0.0326	<0.0001	0.0136	0.0515	0.0001	0.9968	*Patinopecten caurinus*
105	21314	0.0305	<0.0001	0.0194	0.0415	<0.0001	0.9969	*Gymnocanthus pistilliger*
106	20322	0.0284	<0.0001	0.0108	0.0460	<0.0001	0.9969	*Anarhichas orientalis*
107	71891	0.0280	<0.0001	0.0210	0.0350	<0.0001	0.9970	*Plicifusus kroyeri*
108	43042	0.0267	<0.0001	0.0171	0.0362	<0.0001	0.9971	*Urticina crassicornis*
109	21390	0.0259	<0.0001	0.0194	0.0324	<0.0001	0.9972	*Dasycottus setiger*
110	71731	0.0251	0.0001	0.0017	0.0485	<0.0001	0.9973	*Colus halli*
111	98300	0.0234	<0.0001	0.0068	0.0399	<0.0001	0.9974	compound ascidian unident.
112	98000	0.0231	<0.0001	0.0073	0.0389	<0.0001	0.9974	Ascidiacea
113	30420	0.0231	0.0007	0.0000	0.0752	<0.0001	0.9975	*Sebastes polyspinis*
114	22236	0.0203	<0.0001	0.0062	0.0344	<0.0001	0.9976	*Careproctus rastrinus*
115	40512	0.0194	<0.0001	0.0084	0.0305	<0.0001	0.9976	*Aurelia labiata*
116	95036	0.0194	<0.0001	0.0099	0.0289	<0.0001	0.9977	*Alcyonidium pedunculatum*
117	71835	0.0192	<0.0001	0.0119	0.0266	<0.0001	0.9978	*Neptunea borealis*
118	74562	0.0192	<0.0001	0.0110	0.0275	<0.0001	0.9978	*Musculus discors*
119	91015	0.0191	<0.0001	0.0016	0.0367	<0.0001	0.9979	*Suberites* sp.
120	21348	0.0190	<0.0001	0.0124	0.0257	<0.0001	0.9979	*Hemilepidotus papilio*
121	71764	0.0185	<0.0001	0.0091	0.0279	<0.0001	0.9980	*Volutopsius middendorffii*
122	65201	0.0174	<0.0001	0.0012	0.0336	<0.0001	0.9981	*Balanus* sp.
123	43040	0.0172	<0.0001	0.0079	0.0265	<0.0001	0.9981	*Urticina* sp.
124	71772	0.0159	<0.0001	0.0087	0.0231	<0.0001	0.9982	*Beringius beringii*
125	66045	0.0158	<0.0001	0.0067	0.0249	<0.0001	0.9982	*Pandalus goniurus*
126	99997	0.0144	<0.0001	0.0041	0.0246	<0.0001	0.9983	unsorted catch and debris
127	56311	0.0139	<0.0001	0.0115	0.0164	<0.0001	0.9983	*Eunoe nodosa*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
128	78403	0.0132	<0.0001	0.0000	0.0322	<0.0001	0.9983	*Octopus dofleini*
129	71710	0.0132	<0.0001	0.0011	0.0252	<0.0001	0.9984	*Colus* sp.
130	95070	0.0131	<0.0001	0.0087	0.0175	<0.0001	0.9984	*Rhamphostomella costata*
131	20006	0.0125	<0.0001	0.0000	0.0315	<0.0001	0.9985	*Leptagonus frenatus*
132	75285	0.0119	<0.0001	0.0070	0.0168	<0.0001	0.9985	*Serripes groenlandicus*
133	71800	0.0117	<0.0001	0.0066	0.0168	<0.0001	0.9985	*Neptunea* sp.
134	75111	0.0113	<0.0001	0.0084	0.0143	<0.0001	0.9986	*Mactromeris polynyma*
135	81360	0.0112	<0.0001	0.0000	0.0251	<0.0001	0.9986	*Diplopteraster multipes*
136	24001	0.0112	<0.0001	0.0035	0.0189	<0.0001	0.9987	*Zaprora silenus*
137	72059	0.0111	<0.0001	0.0050	0.0172	<0.0001	0.9987	*Aforia* sp.
138	72751	0.0110	<0.0001	0.0055	0.0166	<0.0001	0.9987	*Buccinum plectrum*
139	81870	0.0110	<0.0001	0.0007	0.0213	<0.0001	0.9988	*Dipsacaster borealis*
140	68781	0.0107	<0.0001	0.0045	0.0170	<0.0001	0.9988	*Telmessus cheiragonus*
141	21354	0.0102	<0.0001	0.0027	0.0177	<0.0001	0.9988	*Triglops scepticus*
142	71537	0.0102	0.0002	0.0000	0.0346	<0.0001	0.9989	*Cryptonatica* (=*Natica*)
143	80015	0.0097	<0.0001	0.0027	0.0167	<0.0001	0.9989	*Evasterias troschelii*
144	21355	0.0096	<0.0001	0.0050	0.0142	<0.0001	0.9989	*Triglops pingeli*
145	40511	0.0095	<0.0001	0.0033	0.0156	<0.0001	0.9989	*Aurelia* sp.
146	85210	0.0087	<0.0001	0.0009	0.0165	<0.0001	0.9990	*Psolus* sp.
147	81095	0.0084	<0.0001	0.0062	0.0106	<0.0001	0.9990	*Crossaster papposus*
148	72063	0.0082	<0.0001	0.0054	0.0110	<0.0001	0.9990	*Aforia circinata*
149	41201	0.0079	<0.0001	0.0000	0.0160	<0.0001	0.9991	*Gersemia* sp.
150	65100	0.0076	<0.0001	0.0023	0.0130	<0.0001	0.9991	Thoracica
151	71890	0.0074	<0.0001	0.0041	0.0106	<0.0001	0.9991	*Plicifusus* sp.
152	21921	0.0073	<0.0001	0.0014	0.0131	<0.0001	0.9991	*Pleurogrammus monopterygius*
153	65203	0.0072	<0.0001	0.0015	0.0128	<0.0001	0.9992	*Balanus evermanni*
154	71763	0.0071	<0.0001	0.0035	0.0106	<0.0001	0.9992	*Volutopsius stefanssoni*
155	22258	0.0071	<0.0001	0.0000	0.0196	<0.0001	0.9992	*Careproctus* sp.
156	71524	0.0070	<0.0001	0.0028	0.0113	<0.0001	0.9992	*Cryptonatica* sp.
157	30060	0.0070	<0.0001	0.0018	0.0122	<0.0001	0.9992	*Sebastes alutus*
158	81310	0.0068	<0.0001	0.0022	0.0114	<0.0001	0.9993	*Pteraster* sp.
159	95030	0.0066	<0.0001	0.0044	0.0087	<0.0001	0.9993	*Flustra serrulata*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
160	74106	0.0065	<0.0001	0.0016	0.0114	<0.0001	0.9993	*Chlamys rubida*
161	68510	0.0061	<0.0001	0.0050	0.0073	<0.0001	0.9993	*Oregonia gracilis*
162	71511	0.0061	<0.0001	0.0000	0.0186	<0.0001	0.9993	Naticidae eggs
163	23220	0.0052	<0.0001	0.0000	0.0111	<0.0001	0.9994	*Oncorhynchus tshawytscha*
164	75205	0.0049	<0.0001	0.0034	0.0064	<0.0001	0.9994	*Tellina lutea*
165	50161	0.0048	<0.0001	0.0004	0.0092	<0.0001	0.9994	*Aphrodita* sp.
166	20061	0.0048	<0.0001	0.0029	0.0067	<0.0001	0.9994	*Occella dodecaedron*
167	50010	0.0047	<0.0001	0.0000	0.0106	<0.0001	0.9994	tube worm unident.
168	72747	0.0046	<0.0001	0.0017	0.0075	<0.0001	0.9994	*Buccinum oedematum*
169	74983	0.0045	<0.0001	0.0000	0.0117	<0.0001	0.9995	*Clinocardium ciliatum*
170	83000	0.0045	<0.0001	0.0005	0.0086	<0.0001	0.9995	Ophiuroidea
171	80540	0.0045	<0.0001	0.0025	0.0065	<0.0001	0.9995	*Henricia* sp.
172	1	0.0044	<0.0001	0.0007	0.0081	<0.0001	0.9995	fish eggs unident.
173	69310	0.0044	<0.0001	0.0000	0.0131	<0.0001	0.9995	*Lithodes aequispinus*
174	436	0.0043	<0.0001	0.0014	0.0072	<0.0001	0.9995	*Bathyraja interrupta*
175	85220	0.0041	<0.0001	0.0014	0.0068	<0.0001	0.9995	*Psolus squamatus*
176	10180	0.0041	<0.0001	0.0000	0.0090	<0.0001	0.9995	*Microstomus pacificus*
177	71721	0.0040	<0.0001	0.0029	0.0051	<0.0001	0.9996	*Colus herendeenii*
178	69110	0.0040	<0.0001	0.0015	0.0064	<0.0001	0.9996	*Elassochirus tenuimanus*
179	23235	0.0040	<0.0001	0.0011	0.0068	<0.0001	0.9996	*Oncorhynchus keta*
180	71020	0.0034	<0.0001	0.0000	0.0090	<0.0001	0.9996	*Dendronotus dalli*
181	57409	0.0034	<0.0001	0.0000	0.0119	<0.0001	0.9996	Serpulidae
182	30052	0.0034	<0.0001	0.0000	0.0078	<0.0001	0.9996	*Sebastes melanostictus*
183	66530	0.0033	<0.0001	0.0008	0.0058	<0.0001	0.9996	*Crangon dalli*
184	74060	0.0032	<0.0001	0.0005	0.0059	<0.0001	0.9996	*Modiolus modiolus*
185	66502	0.0031	<0.0001	0.0019	0.0044	<0.0001	0.9996	*Crangon* sp.
186	78454	0.0029	<0.0001	0.0014	0.0044	<0.0001	0.9997	*Sasakiopus salebrosus*
187	75021	0.0029	<0.0001	0.0015	0.0043	<0.0001	0.9997	*Saxidomus gigantea*
188	71774	0.0028	<0.0001	0.0012	0.0045	<0.0001	0.9997	*Beringius stimpsoni*
189	75286	0.0028	<0.0001	0.0006	0.0051	<0.0001	0.9997	*Serripes laperousii*
190	99998	0.0028	<0.0001	0.0000	0.0067	<0.0001	0.9997	Polychaete tubes
191	71580	0.0028	<0.0001	0.0000	0.0080	<0.0001	0.9997	*Euspira pallida*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
192	480	0.0027	<0.0001	0.0000	0.0054	<0.0001	0.9997	*Bathyraja maculata*
193	82530	0.0027	<0.0001	0.0000	0.0093	<0.0001	0.9997	*Allocentrotus fragilis*
194	71010	0.0026	<0.0001	0.0008	0.0045	<0.0001	0.9997	Nudibranchia
195	75284	0.0023	<0.0001	0.0006	0.0041	<0.0001	0.9997	*Serripes* sp.
196	21735	0.0022	<0.0001	0.0000	0.0060	<0.0001	0.9997	*Eleginus gracilis*
197	71915	0.0022	<0.0001	0.0007	0.0037	<0.0001	0.9998	*Neptunea* sp.
198	310	0.0018	<0.0001	0.0000	0.0063	<0.0001	0.9998	*Squalus acanthias*
199	43082	0.0018	<0.0001	0.0000	0.0039	<0.0001	0.9998	*Cribrinopsis fernaldi*
200	95020	0.0018	<0.0001	0.0000	0.0046	<0.0001	0.9998	*Eucratea loricata*
201	80660	0.0017	<0.0001	0.0000	0.0036	<0.0001	0.9998	*Pseudarchaster parelii*
202	22210	0.0017	<0.0001	0.0003	0.0030	<0.0001	0.9998	*Liparis ochotensis*
203	80542	0.0016	<0.0001	0.0004	0.0029	<0.0001	0.9998	*Henricia sanguinolenta*
204	95017	0.0016	<0.0001	0.0002	0.0030	<0.0001	0.9998	*Bugula californica*
205	21356	0.0016	<0.0001	0.0000	0.0040	<0.0001	0.9998	*Triglops macellus*
206	72790	0.0015	<0.0001	0.0003	0.0027	<0.0001	0.9998	*Arctomelon stearnsii*
207	74065	0.0015	<0.0001	0.0006	0.0025	<0.0001	0.9998	*Mytilus* sp.
208	91030	0.0015	<0.0001	0.0000	0.0052	<0.0001	0.9998	*Aphrocallistes vastus*
209	43030	0.0015	<0.0001	0.0004	0.0025	<0.0001	0.9998	*Stomphia* sp.
210	10212	0.0015	<0.0001	0.0000	0.0048	<0.0001	0.9998	*Limanda sakhalinensis*
211	81064	0.0015	<0.0001	0.0002	0.0028	<0.0001	0.9998	*Solaster dawsoni*
212	66030	0.0015	<0.0001	0.0000	0.0035	<0.0001	0.9998	*Pandalus jordani*
213	42001	0.0015	<0.0001	0.0000	0.0029	<0.0001	0.9998	*Virgularia* sp.
214	30051	0.0014	<0.0001	0.0000	0.0046	<0.0001	0.9998	*Sebastes aleutianus*
215	85000	0.0014	<0.0001	0.0004	0.0024	<0.0001	0.9998	Holothuroidea
216	74104	0.0014	<0.0001	0.0006	0.0022	<0.0001	0.9998	*Chlamys* sp.
217	75600	0.0014	<0.0001	0.0004	0.0023	<0.0001	0.9999	*Pododesmus macrochisma*
218	75287	0.0013	<0.0001	0.0000	0.0040	<0.0001	0.9999	*Serripes notabilis*
219	74311	0.0012	<0.0001	0.0008	0.0017	<0.0001	0.9999	*Hiatella arctica*
220	21441	0.0012	<0.0001	0.0010	0.0015	<0.0001	0.9999	*Icelus spatula*
221	24189	0.0012	<0.0001	0.0000	0.0037	<0.0001	0.9999	*Lycodes turneri*
222	66570	0.0012	<0.0001	0.0007	0.0016	<0.0001	0.9999	*Argis* sp.
223	30152	0.0011	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Sebastes variabilis*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
224	21592	0.0011	<0.0001	0.0004	0.0017	<0.0001	0.9999	*Trichodon trichodon*
225	95105	0.0010	<0.0001	0.0003	0.0017	<0.0001	0.9999	*Dendrobeania* sp.
226	71026	0.0010	<0.0001	0.0004	0.0016	<0.0001	0.9999	*Tritonia festiva*
227	71771	0.0010	<0.0001	0.0000	0.0021	<0.0001	0.9999	*Beringius frielei*
228	23805	0.0010	<0.0001	0.0005	0.0015	<0.0001	0.9999	*Lumpenus maculatus*
229	71030	0.0010	<0.0001	0.0004	0.0015	<0.0001	0.9999	*Tritonia diomedea*
230	43100	0.0009	<0.0001	0.0004	0.0015	<0.0001	0.9999	Actinostolidae
231	40011	0.0009	<0.0001	0.0002	0.0017	<0.0001	0.9999	hydroid unident.
232	40505	0.0009	<0.0001	0.0000	0.0018	<0.0001	0.9999	*Phacellophora camtschatica*
233	56312	0.0009	<0.0001	0.0007	0.0012	<0.0001	0.9999	*Eunoe depressa*
234	74980	0.0009	<0.0001	0.0004	0.0015	<0.0001	0.9999	*Clinocardium* sp.
235	50001	0.0009	<0.0001	0.0004	0.0014	<0.0001	0.9999	worm unident.
236	91039	0.0009	<0.0001	0.0000	0.0018	<0.0001	0.9999	*Mycale* sp.
237	71681	0.0009	<0.0001	0.0004	0.0013	<0.0001	0.9999	*Crepidula grandis*
238	72789	0.0009	<0.0001	0.0000	0.0030	<0.0001	0.9999	*Arctomelon* sp.
239	79020	0.0009	<0.0001	0.0003	0.0014	<0.0001	0.9999	*Rossia pacifica*
240	71587	0.0008	<0.0001	0.0003	0.0013	<0.0001	0.9999	*Onchidiopsis* sp.
241	401	0.0008	<0.0001	0.0000	0.0023	<0.0001	0.9999	skate egg case unident.
242	74080	0.0008	<0.0001	0.0002	0.0014	<0.0001	0.9999	*Mytilus edulis*
243	22206	0.0008	<0.0001	0.0000	0.0015	<0.0001	0.9999	*Crystallichthys cyclospilus*
244	40500	0.0008	<0.0001	0.0004	0.0011	<0.0001	0.9999	Scyphozoa
245	66580	0.0008	<0.0001	0.0003	0.0013	<0.0001	0.9999	*Argis dentata*
246	474	0.0007	<0.0001	0.0004	0.0010	<0.0001	0.9999	*Bathyraja parmifera*
247	23230	0.0007	<0.0001	0.0000	0.0013	<0.0001	0.9999	*Oncorhynchus gorbuscha*
248	71025	0.0007	<0.0001	0.0000	0.0013	<0.0001	0.9999	*Tritonia* sp.
249	71726	0.0007	<0.0001	0.0000	0.0012	<0.0001	0.9999	*Colus spitzbergensis*
250	80000	0.0006	<0.0001	0.0000	0.0011	<0.0001	0.9999	Asteroidea
251	75242	0.0006	<0.0001	0.0000	0.0011	<0.0001	0.9999	*Macoma calcarea*
252	20202	0.0006	<0.0001	0.0002	0.0009	<0.0001	1.0000	*Ammodytes hexapterus*
253	22201	0.0006	<0.0001	0.0001	0.0010	<0.0001	1.0000	*Liparis* sp.
254	78012	0.0005	<0.0001	0.0000	0.0012	<0.0001	1.0000	*Benthoctopus leioderma*
255	21932	0.0005	<0.0001	0.0001	0.0009	<0.0001	1.0000	*Hexagrammos stelleri*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
256	68040	0.0005	<0.0001	0.0004	0.0007	<0.0001	1.0000	*Cancer oregonensis*
257	74640	0.0005	<0.0001	0.0000	0.0010	<0.0001	1.0000	*Astarte* sp.
258	74656	0.0005	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Cyclocardia* sp.
259	75267	0.0005	<0.0001	0.0002	0.0008	<0.0001	1.0000	*Siliqua alta*
260	72305	0.0005	<0.0001	0.0000	0.0009	<0.0001	1.0000	*Trichotropis bicarinata*
261	72401	0.0005	<0.0001	0.0002	0.0007	<0.0001	1.0000	*Boreotrophon beringi*
262	21341	0.0004	<0.0001	0.0001	0.0008	<0.0001	1.0000	*Malacocottus zonurus*
263	71785	0.0004	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Beringius* sp.
264	20050	0.0004	<0.0001	0.0003	0.0005	<0.0001	1.0000	*Aspidophoroides bartoni*
265	21333	0.0003	<0.0001	0.0002	0.0005	<0.0001	1.0000	*Artediellus pacificus*
266	66611	0.0003	<0.0001	0.0002	0.0005	<0.0001	1.0000	*Argis lar*
267	71787	0.0003	<0.0001	0.0000	0.0006	<0.0001	1.0000	*Beringius rotundus*
268	21329	0.0003	<0.0001	0.0001	0.0005	<0.0001	1.0000	*Gymnocanthus detrisus*
269	42012	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Halipteris willemoesi*
270	71916	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Neptunea* sp.
271	71792	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Beringius* sp.
272	95006	0.0003	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Leieschara orientalis*
273	70115	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Amicula vestita*
274	70871	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Neptunea gyroscopoides*
275	85171	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Pentamera* sp.
276	60100	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	Amphipoda
277	421	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Raja binoculata*
278	91074	0.0002	<0.0001	0.0000	0.0007	<0.0001	1.0000	*Polymastia* sp.
279	81829	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Leptychaster anomalus*
280	50000	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	Polychaeta
281	80728	0.0002	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Ceramaster* sp.
282	21352	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Triglops forficata*
283	79210	0.0002	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Berryteuthis magister*
284	80110	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Leptasterias groenlandica*
285	22183	0.0002	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Eumicrotremus* sp.
286	97120	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Hemithiris psittacea*
287	23850	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Poroclinus rothrocki*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
288	21	0.0001	<0.0001	0.0000	0.0005	<0.0001	1.0000	*Lampetra tridentata*
289	42000	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	Pennatulacea
290	74416	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Yoldia seminuda*
291	66163	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Spirontocaris lamellicornis*
292	85120	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Molpadia intermedia*
293	71589	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Onchidiopsis* sp.
294	85115	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Molpadia* sp.
295	80230	0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Pedicellaster magister*
296	71500	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	Gastropoda
297	91063	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Phakellia beringensis*
298	94000	0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	Sipuncula
299	72806	0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Velutina* sp.
300	83400	0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Ophiopholis aculeata*
301	30535	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Sebastes variegatus*
302	71535	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cryptonatica* (=*Natica*)
303	71250	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	Doridídae
304	80733	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Ceramaster stellatus*
305	74652	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Cyclocardia ovata*
306	85180	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Bathyplotes* sp.
307	59111	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Notostomum cyclostomum*
308	66515	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Crangon communis*
309	23806	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Lumpenus medius*
310	75240	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Macoma* sp.
311	81060	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Solaster* sp.
312	21311	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Icelinus borealis*
313	22226	<0.0001	<0.0001	0.0000	0.0004	<0.0001	1.0000	*Careproctus phasma*
314	20004	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Leptagonus* sp.
315	473	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Bathyraja aleutica*
316	66170	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Eualus* sp.
317	71719	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Colus jordani*
318	20071	<0.0001	<0.0001	0.0000	0.0003	<0.0001	1.0000	*Hypsagonus quadricornis*
319	71722	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Colus hypolispus*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
320	98070	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Thaliacea
321	66171	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus barbatus*
322	72406	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Boreotrophon clathratus*
323	56310	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eunoe* sp.
324	81315	<0.0001	<0.0001	0.0000	0.0002	<0.0001	1.0000	*Pteraster tesselatus*
325	21350	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Triglops* sp.
326	72420	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Boreotrophon* sp.
327	71900	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Plicifusus griseus*
328	23807	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lumpenus fabricii*
329	80549	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Henricia spiculifera*
330	41000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Anthozoa
331	21345	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Hemilepidotus zapus*
332	56300	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Polynoidae
333	92500	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Nemertea
334	72535	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Margarites costalis*
335	22190	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumicrotremus phrynoides*
336	93100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Priapula
337	66033	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus tridens*
338	23055	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Osmerus mordax*
339	62000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Isopoda
340	94011	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Phascolosomatidae
341	40506	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Aequorea* sp.
342	22182	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumicrotremus andriashevi*
343	45000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Ctenophora
344	98200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Halocynthia* sp.
345	66548	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Crangon septemspinosa*
346	85169	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pentamera lissoplaca*
347	71520	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Amauropsis purpurea*
348	21406	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nautichthys oculofasciatus*
349	71583	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Lamellariidae
350	22265	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Liparis marmoratus*
351	20035	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bathyagonus alascanus*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
352	43029	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Stomphia didemon*
353	71634	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tachyrhynchus erosus*
354	66600	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Sclerocrangon* sp.
355	92000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Platyhelminthes
356	82730	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	sand dollar unident.
357	66203	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lebbeus groenlandicus*
358	23803	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumesogrammus praecisus*
359	79000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Decapodiformes
360	71525	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Natica* sp.
361	71515	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Bulbus fragilis*
362	74438	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nuculana conceptionis*
363	20015	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Agonopsis vulsa*
364	66020	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus* sp.
365	71730	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Colus aphelus*
366	85070	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pseudostichopus mollis*
367	66034	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus* sp.
368	62025	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Rocinella angusta*
369	22178	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eumicrotremus orbis*
370	22600	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Myctophidae
371	43001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Actinauge verrilli*
372	83311	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiura cryptolepis*
373	20001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pallasina barbata*
374	20055	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Anoplagonus inermis*
375	99902	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Molgula grifithsii*
376	21405	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Nautichthys pribilovius*
377	22200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Liparidae
378	71584	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lamellaria* sp.
379	20051	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ulcina olrikii*
380	3	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	fish unident.
381	66193	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus suckleyi*
382	80547	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Henricia asthenactis*
383	83336	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Amphiophiura nodosa*

Appendix B Table 1. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
384	74414	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Yoldia* sp.
385	66179	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus macilentus*
386	69285	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Acantholithodes hispidus*
387	66200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lebbeus* sp.
388	20018	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Odontopyxis trispinosa*
389	22219	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Careproctus* sp.
390	64000	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Mysida
391	66500	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Crangonidae
392	72019	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Antiplanes* sp.
393	83360	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Ophiopholis* sp.
394	66019	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Pandalidae
395	66161	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Spirontocaris arcuata*
396	22238	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Liparis tunicatus*
397	83010	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Ophiuridae

Appendix B Table 2. -- Rank of fish and invertebrate taxa by weighted total CPUE (kg/ha) from the 2010 northern Bering Sea shelf bottom trawl survey.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
1	10210	21.3574	0.0575	20.8825	21.8324	0.1455	0.1455	*Limanda aspera*
2	68580	15.9012	0.0313	15.5507	16.2517	0.1083	0.2538	*Chionoecetes opilio*
3	10285	15.1441	0.0399	14.7487	15.5394	0.1032	0.3570	*Pleuronectes quadrituberculatus*
4	81742	15.0554	0.0406	14.6563	15.4546	0.1026	0.4596	*Asterias amurensis*
5	98310	7.8285	0.3917	6.5893	9.0678	0.0533	0.5129	*Aplidium* sp.
6	98082	6.2924	0.0199	6.0132	6.5715	0.0429	0.5558	*Styela rustica*
7	71884	5.7430	0.0058	5.5924	5.8936	0.0391	0.5949	*Neptunea heros*
8	21735	4.5373	0.0243	4.2287	4.8458	0.0309	0.6258	*Eleginus gracilis*
9	99994	3.9419	0.0030	3.8340	4.0498	0.0269	0.6527	empty gastropod shells
10	471	3.8427	0.0053	3.6983	3.9871	0.0262	0.6789	*Bathyraja parmifera*
11	69086	3.7840	0.0041	3.6579	3.9101	0.0258	0.7046	*Pagurus trigonocheirus*
12	80590	2.9827	0.0021	2.8920	3.0734	0.0203	0.7250	*Leptasterias polaris*
13	68577	2.9783	0.0115	2.7659	3.1908	0.0203	0.7452	*Hyas coarctatus*
14	83021	2.8909	0.0068	2.7277	3.0542	0.0197	0.7649	*Gorgonocephalus* sp.
15	82511	2.5591	0.0163	2.3063	2.8119	0.0174	0.7824	*Strongylocentrotus* sp.
16	98320	2.1252	0.0197	1.8470	2.4034	0.0145	0.7969	*Synoicum* sp.
17	21368	1.9862	0.0043	1.8569	2.1155	0.0135	0.8104	*Myoxocephalus verrucosus*
18	21725	1.8911	0.0031	1.7814	2.0008	0.0129	0.8233	*Boreogadus saida*
19	69042	1.6631	0.0008	1.6063	1.7199	0.0113	0.8346	*Pagurus brandti*
20	21720	1.4531	0.0011	1.3879	1.5182	0.0099	0.8445	*Gadus macrocephalus*
21	21371	1.4131	0.0005	1.3711	1.4552	0.0096	0.8541	*Myoxocephalus jaok*
22	10120	1.1652	0.0008	1.1097	1.2206	0.0079	0.8621	*Hippoglossus stenolepis*
23	21110	1.1481	0.0019	1.0613	1.2350	0.0078	0.8699	*Clupea pallasi*
24	10260	1.0611	0.0003	1.0251	1.0972	0.0072	0.8771	*Lepidopsetta* sp.
25	21740	1.0551	0.0005	1.0112	1.0991	0.0072	0.8843	*Theragra chalcogramma*
26	98105	0.9851	0.0026	0.8840	1.0861	0.0067	0.8910	*Boltenia ovifera*
27	69120	0.9492	0.0008	0.8938	1.0047	0.0065	0.8975	*Pagurus capillatus*
28	10220	0.7972	0.0002	0.7686	0.8258	0.0054	0.9029	*Platichthys stellatus*
29	80020	0.7935	0.0006	0.7447	0.8422	0.0054	0.9083	*Evasterias echinosoma*
30	80200	0.7774	0.0002	0.7464	0.8084	0.0053	0.9136	*Lethasterias nanimensis*
31	71882	0.7534	0.0003	0.7216	0.7851	0.0051	0.9187	*Neptunea ventricosa*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
32	23041	0.7307	0.0002	0.7006	0.7607	0.0050	0.9237	*Mallotus villosus*
33	40504	0.6335	<0.0001	0.6176	0.6495	0.0043	0.9280	*Chrysaora melanaster*
34	83020	0.6333	0.0002	0.6071	0.6596	0.0043	0.9324	*Gorgonocephalus eucnemis*
35	41221	0.6205	0.0005	0.5781	0.6629	0.0042	0.9366	*Gersemia rubiformis*
36	10140	0.6171	0.0001	0.5964	0.6377	0.0042	0.9408	*Hippoglossoides robustus*
37	91995	0.6159	0.0024	0.5186	0.7132	0.0042	0.9450	Porifera
38	80594	0.5461	0.0003	0.5137	0.5786	0.0037	0.9487	*Leptasterias arctica*
39	24184	0.4613	<0.0001	0.4461	0.4765	0.0031	0.9518	*Lycodes raridens*
40	98205	0.4499	0.0014	0.3767	0.5231	0.0031	0.9549	*Halocynthia aurantium*
41	98213	0.4413	0.0005	0.3954	0.4873	0.0030	0.9579	*Distaplia smithi*
42	71001	0.4339	0.0002	0.4049	0.4629	0.0030	0.9609	gastropod eggs
43	85219	0.3291	0.0005	0.2856	0.3727	0.0022	0.9631	*Psolus fabricii*
44	99993	0.3283	<0.0001	0.3155	0.3411	0.0022	0.9654	empty bivalve shells
45	21388	0.2713	0.0003	0.2362	0.3063	0.0018	0.9672	*Enophrys diceraus*
46	71004	0.2171	<0.0001	0.2019	0.2323	0.0015	0.9687	*Neptunea* sp.
47	98000	0.1932	<0.0001	0.1746	0.2119	0.0013	0.9700	Ascidiacea
48	91000	0.1644	0.0002	0.1377	0.1912	0.0011	0.9711	Porifera
49	22205	0.1484	<0.0001	0.1431	0.1537	0.0010	0.9721	*Liparis gibbus*
50	69090	0.1457	<0.0001	0.1377	0.1538	0.0010	0.9731	*Pagurus ochotensis*
51	68781	0.1425	<0.0001	0.1320	0.1530	0.0010	0.9741	*Telmessus cheiragonus*
52	69061	0.1405	<0.0001	0.1346	0.1463	0.0010	0.9750	*Labidochirus splendescens*
53	40011	0.1381	0.0002	0.1117	0.1645	0.0009	0.9760	hydroid unident.
54	43021	0.1355	<0.0001	0.1253	0.1456	0.0009	0.9769	*Metridium farcimen*
55	65205	0.1268	<0.0001	0.1150	0.1385	0.0009	0.9778	*Balanus rostratus*
56	21315	0.1219	<0.0001	0.1163	0.1275	0.0008	0.9786	*Gymnocanthus tricuspis*
57	69322	0.1206	<0.0001	0.1111	0.1300	0.0008	0.9794	*Paralithodes camtschaticus*
58	65203	0.1189	<0.0001	0.1076	0.1301	0.0008	0.9802	*Balanus evermanni*
59	80110	0.1185	<0.0001	0.1112	0.1259	0.0008	0.9810	*Leptasterias groenlandica*
60	72740	0.1131	<0.0001	0.0969	0.1294	0.0008	0.9818	*Buccinum* sp.
61	72755	0.1091	<0.0001	0.1038	0.1144	0.0007	0.9826	*Buccinum polare*
62	66570	0.1082	<0.0001	0.1013	0.1151	0.0007	0.9833	*Argis* sp.
63	69323	0.1062	<0.0001	0.1014	0.1109	0.0007	0.9840	*Paralithodes platypus*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
64	10212	0.1054	<0.0001	0.1003	0.1105	0.0007	0.9847	*Limanda sakhalinensis*
65	43042	0.0948	<0.0001	0.0886	0.1010	0.0006	0.9854	*Urticina crassicornis*
66	71511	0.0934	<0.0001	0.0898	0.0970	0.0006	0.9860	Naticidae eggs
67	23055	0.0930	<0.0001	0.0872	0.0988	0.0006	0.9867	*Osmerus mordax*
68	71002	0.0873	<0.0001	0.0792	0.0953	0.0006	0.9872	*Buccinum* sp.
69	43000	0.0757	<0.0001	0.0701	0.0813	0.0005	0.9878	Actiniaria
70	43032	0.0708	<0.0001	0.0661	0.0756	0.0005	0.9882	*Stomphia coccinea*
71	75111	0.0695	<0.0001	0.0662	0.0728	0.0005	0.9887	*Mactromeris polynyma*
72	43030	0.0692	<0.0001	0.0590	0.0794	0.0005	0.9892	*Stomphia* sp.
73	71524	0.0689	<0.0001	0.0648	0.0729	0.0005	0.9897	*Cryptonatica* sp.
74	21348	0.0667	<0.0001	0.0641	0.0693	0.0005	0.9901	*Hemilepidotus papilio*
75	69095	0.0663	<0.0001	0.0638	0.0689	0.0005	0.9906	*Pagurus rathbuni*
76	23807	0.0634	<0.0001	0.0587	0.0681	0.0004	0.9910	*Lumpenus fabricii*
77	10211	0.0603	<0.0001	0.0525	0.0680	0.0004	0.9914	*Limanda proboscidea*
78	20322	0.0567	<0.0001	0.0512	0.0623	0.0004	0.9918	*Anarhichas orientalis*
79	83320	0.0479	<0.0001	0.0446	0.0512	0.0003	0.9921	*Ophiura sarsi*
80	98212	0.0472	<0.0001	0.0442	0.0503	0.0003	0.9924	*Distaplia occidentalis*
81	24185	0.0463	<0.0001	0.0428	0.0499	0.0003	0.9928	*Lycodes palearis*
82	21314	0.0427	<0.0001	0.0402	0.0452	0.0003	0.9930	*Gymnocanthus pistilliger*
83	24189	0.0423	<0.0001	0.0389	0.0457	0.0003	0.9933	*Lycodes turneri*
84	71772	0.0411	<0.0001	0.0380	0.0442	0.0003	0.9936	*Beringius beringii*
85	81095	0.0398	<0.0001	0.0372	0.0423	0.0003	0.9939	*Crossaster papposus*
86	95070	0.0338	<0.0001	0.0306	0.0371	0.0002	0.9941	*Rhamphostomella costata*
87	74104	0.0336	<0.0001	0.0275	0.0398	0.0002	0.9943	*Chlamys* sp.
88	99999	0.0309	<0.0001	0.0248	0.0370	0.0002	0.9946	unsorted shab
89	95017	0.0308	<0.0001	0.0268	0.0348	0.0002	0.9948	*Bugula californica*
90	81355	0.0285	<0.0001	0.0266	0.0305	0.0002	0.9950	*Pteraster obscurus*
91	23235	0.0280	<0.0001	0.0255	0.0305	0.0002	0.9952	*Oncorhynchus keta*
92	71769	0.0278	<0.0001	0.0228	0.0328	0.0002	0.9953	*Beringius* sp.
93	95035	0.0263	<0.0001	0.0241	0.0286	0.0002	0.9955	*Flustrellidra corniculata*
94	43010	0.0261	<0.0001	0.0237	0.0285	0.0002	0.9957	*Metridium* sp.
95	66580	0.0257	<0.0001	0.0242	0.0273	0.0002	0.9959	*Argis dentata*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
96	72752	0.0249	<0.0001	0.0239	0.0259	0.0002	0.9960	*Buccinum scalariforme*
97	66601	0.0246	<0.0001	0.0224	0.0269	0.0002	0.9962	*Sclerocrangon boreas*
98	99997	0.0238	<0.0001	0.0191	0.0285	0.0002	0.9964	unsorted catch and debris
99	71753	0.0211	<0.0001	0.0193	0.0229	0.0001	0.9965	*Pyrulofusus deformis*
100	71835	0.0206	<0.0001	0.0193	0.0219	0.0001	0.9967	*Neptunea borealis*
101	95030	0.0203	<0.0001	0.0192	0.0214	0.0001	0.9968	*Flustra serrulata*
102	71800	0.0196	<0.0001	0.0169	0.0224	0.0001	0.9969	*Neptunea* sp.
103	70108	0.0183	<0.0001	0.0161	0.0206	0.0001	0.9971	*Cryptochiton stelleri*
104	69400	0.0180	<0.0001	0.0165	0.0194	0.0001	0.9972	*Erimacrus isenbeckii*
105	72751	0.0178	<0.0001	0.0163	0.0193	0.0001	0.9973	*Buccinum plectrum*
106	22258	0.0154	<0.0001	0.0136	0.0172	0.0001	0.9974	*Careproctus* sp.
107	95036	0.0152	<0.0001	0.0131	0.0172	0.0001	0.9975	*Alcyonidium pedunculatum*
108	21370	0.0146	<0.0001	0.0135	0.0157	0.0001	0.9976	*Myoxocephalus polyacanthocephalus*
109	85210	0.0141	<0.0001	0.0113	0.0169	<0.0001	0.9977	*Psolus* sp.
110	23809	0.0133	<0.0001	0.0118	0.0149	<0.0001	0.9978	*Acantholumpenus mackayi*
111	80542	0.0132	<0.0001	0.0106	0.0158	<0.0001	0.9979	*Henricia sanguinolenta*
112	66548	0.0128	<0.0001	0.0116	0.0141	<0.0001	0.9980	*Crangon septemspinosa*
113	72758	0.0114	<0.0001	0.0093	0.0134	<0.0001	0.9980	*Buccinum glaciale*
114	20040	0.0111	<0.0001	0.0103	0.0119	<0.0001	0.9981	*Podothecus accipenserinus*
115	71525	0.0107	<0.0001	0.0095	0.0118	<0.0001	0.9982	*Natica* sp.
116	72743	0.0106	<0.0001	0.0101	0.0111	<0.0001	0.9983	*Buccinum angulosum*
117	80595	0.0097	<0.0001	0.0087	0.0106	<0.0001	0.9983	*Leptasterias* sp.
118	85000	0.0096	<0.0001	0.0087	0.0105	<0.0001	0.9984	Holothuroidea
119	71584	0.0095	<0.0001	0.0088	0.0101	<0.0001	0.9985	*Lamellaria* sp.
120	82510	0.0095	<0.0001	0.0083	0.0106	<0.0001	0.9985	*Strongylocentrotus droebachiensis*
121	41201	0.0095	<0.0001	0.0085	0.0104	<0.0001	0.9986	*Gersemia* sp.
122	66045	0.0091	<0.0001	0.0083	0.0099	<0.0001	0.9987	*Pandalus goniurus*
123	78454	0.0087	<0.0001	0.0079	0.0094	<0.0001	0.9987	*Sasakiopus salebrosus*
124	20041	0.0084	<0.0001	0.0075	0.0092	<0.0001	0.9988	*Podothecus veternus*
125	71012	0.0080	<0.0001	0.0071	0.0089	<0.0001	0.9988	*Tochuina tetraquetra*
126	66170	0.0062	<0.0001	0.0057	0.0068	<0.0001	0.9989	*Eualus* sp.
127	10115	0.0062	<0.0001	0.0057	0.0067	<0.0001	0.9989	*Reinhardtius hippoglossoides*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
128	82740	0.0059	<0.0001	0.0053	0.0066	<0.0001	0.9990	*Echinarachnius parma*
129	95080	0.0054	<0.0001	0.0048	0.0061	<0.0001	0.9990	*Cellepora ventricosa*
130	43009	0.0053	<0.0001	0.0044	0.0063	<0.0001	0.9990	*Corallimorphus* sp.
131	75287	0.0053	<0.0001	0.0047	0.0058	<0.0001	0.9991	*Serripes notabilis*
132	75286	0.0050	<0.0001	0.0042	0.0058	<0.0001	0.9991	*Serripes laperousii*
133	75284	0.0049	<0.0001	0.0042	0.0056	<0.0001	0.9991	*Serripes* sp.
134	99998	0.0048	<0.0001	0.0039	0.0057	<0.0001	0.9992	Polychaete tubes
135	71774	0.0044	<0.0001	0.0038	0.0050	<0.0001	0.9992	*Beringius stimpsoni*
136	98300	0.0042	<0.0001	0.0037	0.0048	<0.0001	0.9992	compound ascidian unident.
137	23225	0.0040	<0.0001	0.0032	0.0047	<0.0001	0.9992	*Oncorhynchus kisutch*
138	40500	0.0039	<0.0001	0.0034	0.0043	<0.0001	0.9993	Scyphozoa
139	94000	0.0035	<0.0001	0.0032	0.0038	<0.0001	0.9993	Sipuncula
140	24188	0.0035	<0.0001	0.0031	0.0038	<0.0001	0.9993	*Lycodes polaris*
141	56311	0.0033	<0.0001	0.0031	0.0035	<0.0001	0.9993	*Eunoe nodosa*
142	21377	0.0032	<0.0001	0.0027	0.0037	<0.0001	0.9994	*Myoxocephalus quadricornis*
143	81065	0.0031	<0.0001	0.0025	0.0037	<0.0001	0.9994	*Solaster stimpsoni*
144	80546	0.0030	<0.0001	0.0028	0.0033	<0.0001	0.9994	*Henricia tumida*
145	23806	0.0030	<0.0001	0.0027	0.0032	<0.0001	0.9994	*Lumpenus medius*
146	95000	0.0029	<0.0001	0.0026	0.0032	<0.0001	0.9994	Bryozoa
147	71010	0.0029	<0.0001	0.0026	0.0032	<0.0001	0.9995	Nudibranchia
148	95020	0.0026	<0.0001	0.0022	0.0030	<0.0001	0.9995	*Eucratea loricata*
149	57000	0.0025	<0.0001	0.0020	0.0030	<0.0001	0.9995	*Sabellidae*
150	69060	0.0024	<0.0001	0.0019	0.0029	<0.0001	0.9995	*Pagurus aleuticus*
151	75240	0.0023	<0.0001	0.0018	0.0027	<0.0001	0.9995	*Macoma* sp.
152	71886	0.0022	<0.0001	0.0018	0.0025	<0.0001	0.9995	*Clinopegma magnum*
153	40515	0.0022	<0.0001	0.0018	0.0025	<0.0001	0.9996	*Chrysaora fuscescens*
154	85201	0.0021	<0.0001	0.0017	0.0025	<0.0001	0.9996	*Cucumaria fallax*
155	71763	0.0020	<0.0001	0.0018	0.0023	<0.0001	0.9996	*Volutopsius stefanssoni*
156	21376	0.0020	<0.0001	0.0017	0.0023	<0.0001	0.9996	*Megalocottus platycephalus*
157	40561	0.0019	<0.0001	0.0017	0.0022	<0.0001	0.9996	*Cyanea capillata*
158	71020	0.0019	<0.0001	0.0017	0.0020	<0.0001	0.9996	*Dendronotus dalli*
159	10155	0.0019	<0.0001	0.0017	0.0021	<0.0001	0.9996	*Liopsetta glacialis*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
160	81315	0.0019	<0.0001	0.0016	0.0021	<0.0001	0.9997	*Pteraster tesselatus*
161	40049	0.0018	<0.0001	0.0016	0.0019	<0.0001	0.9997	Sertulariidae unid.
162	95038	0.0017	<0.0001	0.0014	0.0021	<0.0001	0.9997	*Alcyonidium* sp.
163	21932	0.0017	<0.0001	0.0016	0.0019	<0.0001	0.9997	*Hexagrammos stelleri*
164	75285	0.0017	<0.0001	0.0014	0.0019	<0.0001	0.9997	*Serripes groenlandicus*
165	74311	0.0016	<0.0001	0.0014	0.0018	<0.0001	0.9997	*Hiatella arctica*
166	68590	0.0015	<0.0001	0.0012	0.0018	<0.0001	0.9997	*Chionoecetes* hybrid
167	66502	0.0015	<0.0001	0.0013	0.0016	<0.0001	0.9997	*Crangon* sp.
168	43082	0.0014	<0.0001	0.0012	0.0016	<0.0001	0.9997	*Cribrinopsis fernaldi*
169	66203	0.0014	<0.0001	0.0012	0.0016	<0.0001	0.9998	*Lebbeus groenlandicus*
170	74060	0.0014	<0.0001	0.0013	0.0015	<0.0001	0.9998	*Modiolus modiolus*
171	74983	0.0013	<0.0001	0.0011	0.0015	<0.0001	0.9998	*Clinocardium ciliatum*
172	72305	0.0013	<0.0001	0.0010	0.0015	<0.0001	0.9998	*Trichotropis bicarinata*
173	43100	0.0012	<0.0001	0.0010	0.0015	<0.0001	0.9998	Actinostolidae
174	21355	0.0012	<0.0001	0.0011	0.0013	<0.0001	0.9998	*Triglops pingeli*
175	66000	0.0012	<0.0001	0.0009	0.0014	<0.0001	0.9998	shrimp unident.
176	62000	0.0011	<0.0001	0.0009	0.0013	<0.0001	0.9998	Isopoda
177	71026	0.0011	<0.0001	0.0010	0.0013	<0.0001	0.9998	*Tritonia festiva*
178	74414	0.0011	<0.0001	0.0009	0.0013	<0.0001	0.9998	*Yoldia* sp.
179	68578	0.0010	<0.0001	0.0009	0.0012	<0.0001	0.9998	*Hyas lyratus*
180	22238	0.0010	<0.0001	0.0009	0.0010	<0.0001	0.9998	*Liparis tunicatus*
181	21405	0.0009	<0.0001	0.0008	0.0010	<0.0001	0.9998	*Nautichthys pribilovius*
182	74646	0.0008	<0.0001	0.0007	0.0010	<0.0001	0.9999	*Astarte arctica*
183	21378	0.0008	<0.0001	0.0007	0.0010	<0.0001	0.9999	*Myoxocephalus scorpioides*
184	98070	0.0008	<0.0001	0.0006	0.0009	<0.0001	0.9999	Thaliacea
185	70100	0.0008	<0.0001	0.0006	0.0009	<0.0001	0.9999	Polyplacophora
186	40512	0.0007	<0.0001	0.0007	0.0008	<0.0001	0.9999	*Aurelia labiata*
187	95105	0.0007	<0.0001	0.0006	0.0009	<0.0001	0.9999	*Dendrobeania* sp.
188	20061	0.0007	<0.0001	0.0007	0.0008	<0.0001	0.9999	*Occella dodecaedron*
189	78012	0.0007	<0.0001	0.0006	0.0008	<0.0001	0.9999	*Benthoctopus leioderma*
190	71535	0.0007	<0.0001	0.0006	0.0008	<0.0001	0.9999	*Cryptonatica* (=*Natica*)
191	23804	0.0007	<0.0001	0.0006	0.0007	<0.0001	0.9999	*Stichaeus punctatus*

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
192	21334	0.0006	<0.0001	0.0006	0.0007	<0.0001	0.9999	*Artediellus scaber*
193	71896	0.0006	<0.0001	0.0005	0.0007	<0.0001	0.9999	*Plicifusus oceanodromae*
194	91998	0.0006	<0.0001	0.0005	0.0007	<0.0001	0.9999	Porifera
195	71030	0.0006	<0.0001	0.0005	0.0006	<0.0001	0.9999	*Tritonia diomedea*
196	20051	0.0005	<0.0001	0.0005	0.0006	<0.0001	0.9999	*Ulcina olrikii*
197	71820	0.0005	<0.0001	0.0004	0.0007	<0.0001	0.9999	*Neptunea pribiloffensis*
198	74985	0.0005	<0.0001	0.0005	0.0006	<0.0001	0.9999	*Clinocardium californiense*
199	22182	0.0005	<0.0001	0.0004	0.0005	<0.0001	0.9999	*Eumicrotremus andriashevi*
200	71018	0.0004	<0.0001	0.0004	0.0005	<0.0001	0.9999	*Dendronotus* sp.
201	474	0.0004	<0.0001	0.0004	0.0005	<0.0001	0.9999	*Bathyraja parmifera*
202	92500	0.0004	<0.0001	0.0004	0.0005	<0.0001	0.9999	Nemertea
203	71710	0.0004	<0.0001	0.0004	0.0005	<0.0001	0.9999	*Colus* sp.
204	71731	0.0004	<0.0001	0.0003	0.0004	<0.0001	0.9999	*Colus halli*
205	21592	0.0004	<0.0001	0.0003	0.0004	<0.0001	0.9999	*Trichodon trichodon*
206	80000	0.0004	<0.0001	0.0003	0.0004	<0.0001	0.9999	Asteroidea
207	43040	0.0003	<0.0001	0.0003	0.0004	<0.0001	0.9999	*Urticina* sp.
208	85170	0.0003	<0.0001	0.0003	0.0004	<0.0001	1.0000	*Pentamera* sp.
209	80540	0.0003	<0.0001	0.0003	0.0004	<0.0001	1.0000	*Henricia* sp.
210	21423	0.0003	<0.0001	0.0003	0.0004	<0.0001	1.0000	*Eurymen gyrinus*
211	43045	0.0003	<0.0001	0.0003	0.0004	<0.0001	1.0000	*Bathyphelia australis*
212	401	0.0003	<0.0001	0.0002	0.0003	<0.0001	1.0000	skate egg case unident.
213	68560	0.0003	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Chionoecetes bairdi*
214	40511	0.0003	<0.0001	0.0003	0.0003	<0.0001	1.0000	*Aurelia* sp.
215	75205	0.0003	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Tellina lutea*
216	71726	0.0003	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Colus spitzbergensis*
217	66600	0.0003	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Sclerocrangon* sp.
218	22178	0.0002	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Eumicrotremus orbis*
219	71891	0.0002	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Plicifusus kroyeri*
220	23805	0.0002	<0.0001	0.0002	0.0003	<0.0001	1.0000	*Lumpenus maculatus*
221	83400	0.0002	<0.0001	0.0002	0.0002	<0.0001	1.0000	*Ophiopholis aculeata*
222	20202	0.0002	<0.0001	0.0002	0.0002	<0.0001	1.0000	*Ammodytes hexapterus*
223	98214	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Distaplia* sp.

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
224	71681	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Crepidula grandis*
225	50001	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	worm unident.
226	75241	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Macoma nasuta*
227	71721	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Colus herendeenii*
228	69316	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Hapalogaster grebnitzkii*
229	75242	0.0002	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Macoma calcarea*
230	66050	0.0001	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Pandalus hypsinotus*
231	22265	0.0001	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Liparis marmoratus*
232	24191	0.0001	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Lycodes brevipes*
233	50000	0.0001	<0.0001	0.0001	0.0001	<0.0001	1.0000	Polychaeta
234	75331	0.0001	<0.0001	0.0001	0.0002	<0.0001	1.0000	*Mya baxteri*
235	23803	0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Eumesogrammus praecisus*
236	71250	0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	Dorididae
237	50010	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*tube* worm unident.
238	56312	<0.0001	<0.0001	0.0000	0.0001	<0.0001	1.0000	*Eunoe depressa*
239	21360	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Microcottus sellaris*
240	81071	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Solaster* sp.
241	24186	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lycodes mucosus*
242	60101	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Iphinoe* sp.
243	60100	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Amphipoda
244	72401	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Boreotrophon beringi*
245	66193	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Eualus suckleyi*
246	23808	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lumpenus sagitta*
247	21438	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Icelus spiniger*
248	83336	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Amphiophiura nodosa*
249	21316	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnocanthus galeatus*
250	21379	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Trichocottus brashnikovi*
251	40505	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Phacellophora camtschatica*
252	20001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pallasina barbata*
253	23843	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Chirolophis snyderi*
254	66163	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Spirontocaris lamellicornis*
255	75201	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tellina* sp.

Appendix B Table 2. -- Continued.

Rank	Species code	Mean CPUE (kg/ha)	Standard error	95% Confidence limits		Proportion	Cumulative proportion	Scientific name
256	72510	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	trochid unident.
257	40035	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Abietinaria greenei*
258	74654	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Cyclocardia crassidens*
259	71589	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Onchidiopsis* sp.
260	24192	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Gymnelus viridis*
261	21441	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Icelus spatula*
262	71500	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	Gastropoda
263	72420	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Boreotrophon* sp.
264	72551	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Otukaia kiheiziebisu*
265	22226	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Careproctus phasma*
266	66200	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Lebbeus* sp.
267	71025	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Tritonia* sp.
268	66031	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Pandalus eous*
269	20050	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Aspidophoroides bartoni*
270	22201	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	1.0000	*Liparis* sp.

Appendix C: List of Species Encountered

Appendix C lists all fish and invertebrate taxa observed during the AFSC's eastern and northern Bering Sea bottom trawl survey.

List of Tables

Appendix C Table 1 - Fish species encountered during the 2010 eastern and northern Bering Sea bottom trawl survey.

Appendix C Table 2 - Invertebrate species encountered during the 2010 eastern northern Bering Sea bottom trawl survey.

Appendix C Table 1. -- Fish species encountered during the 2010 EBS (eastern Bering Sea) and NBS (northern Bering Sea) bottom trawl survey ("*" denotes that fish was exclusive to the EBS and "+" denotes that fish was exclusive to the NBS).

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Agonidae	*Agonopsis vulsa**	northern spearnose poacher	1	106	106	106	61.31828	61.31828
	*Anoplagonus inermis**	smooth alligatorfish	1	74	74	74	57.34273	57.34273
	Aspidophoroides bartoni	Aleutian alligatorfish	34	46	147	76	56.64977	64.67860
	*Bathyagonus alascanus**	gray starsnout	5	116	192	150	54.83442	59.00897
	*Hypsagonus quadricornis**	fourhorn poacher	3	122	147	133	60.66818	60.99868
	*Leptagonus frenatus**	sawback poacher	45	75	162	113	54.83442	61.99040
	Leptagonus sp.		4	86	105	95	61.33807	61.65203
	Occella dodecaedron	Bering poacher	38	11	47	31	57.65588	63.68882
	*Odontopyxis trispinosa**	pygmy poacher	1	120	120	120	59.33225	59.33225
	Pallasina barbata	tubenose poacher	6	14	39	24	59.01855	64.30037
	Podothecus accipenserinus	sturgeon poacher	245	20	134	60	54.70643	62.67765
	Podothecus veternus+	veteran poacher	39	11	63	33	60.66768	65.32702
	Ulcina olrikii	Arctic alligatorfish	18	24	76	46	61.67248	65.02415
Ammodytidae	*Ammodytes hexapterus*	Pacific sand lance	19	14	58	35	57.01368	64.31600
Anarhichadidae	*Anarhichas orientalis*	Bering wolffish	11	15	80	35	55.03365	64.64992
Bathymasteridae	*Bathymaster signatus**	searcher	42	94	192	127	54.83442	60.66465
Clupeidae	*Clupea pallasi*	Pacific herring	113	11	102	40	56.64557	65.32702
Cottidae	*Artediellus pacificus**	hookhorn sculpin	15	66	129	83	56.32025	58.99785
	Artediellus scaber+	hamecon	6	26	38	32	63.98052	65.00470
	*Dasycottus setiger**	spinyhead sculpin	52	80	192	122	54.97447	60.66960
	Enophrys diceraus+	antlered sculpin	33	14	52	25	61.67337	65.00470
	Eurymen gyrinus+	smoothcheek sculpin	3	24	30	26	64.32090	64.64992
	*Gymnocanthus detrisus**	purplegray sculpin	4	66	106	79	56.98497	60.68477
	Gymnocanthus galeatus	armorhead sculpin	9	28	107	73	56.64540	64.01273
	Gymnocanthus pistilliger	threaded sculpin	95	14	84	33	56.68552	65.32702
	Gymnocanthus tricuspis+	Arctic staghorn sculpin	45	18	53	33	61.98527	65.32702
	*Hemilepidotus jordani**	yellow Irish lord	40	25	141	77	54.70643	60.28822
	Hemilepidotus papilio	butterfly sculpin	146	26	118	58	56.64977	65.32702
	*Hemilepidotus zapus**	longfin Irish lord	1	87	87	87	59.33277	59.33277

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Cottidae	*Hemitripterus bolini**	bigmouth sculpin	91	49	192	113	55.00095	61.65138
	*Icelinus borealis**	northern sculpin	5	58	80	65	59.84002	60.28822
	Icelus spatula	spatulate sculpin	41	46	124	72	55.32223	64.67860
	Icelus spiniger	thorny sculpin	117	57	192	109	54.83442	63.33627
	*Malacocottus zonurus**	darkfin sculpin	2	155	192	173	58.65430	58.68483
	Megalocottus platycephalus+	belligerent sculpin	2	14	15	14	63.65018	64.30037
	Microcottus sellaris+	brightbelly sculpin	2	15	26	20	64.31973	64.64992
	Myoxocephalus jaok	plain sculpin	197	11	102	39	56.32808	64.68485
	Myoxocephalus polyacanthocephalus	great sculpin	170	24	147	72	54.99682	64.64992
	Myoxocephalus quadricornis+	fourhorn sculpin	2	15	15	15	63.65018	63.66763
	Myoxocephalus scorpioides+	Arctic sculpin	1	29	29	29	62.93715	62.93715
	Myoxocephalus verrucosus	warty sculpin	129	15	102	48	56.98818	65.32702
	*Nautichthys oculofasciatus**	sailfin sculpin	1	34	34	34	58.33355	58.33355
	Nautichthys pribilovius	eyeshade sculpin	15	14	74	28	56.64557	64.67860
	Trichocottus brashnikovi+	hairhead sculpin	1	46	46	46	64.67860	64.67860
	*Triglops forficata**	scissortail sculpin	3	61	135	92	56.67795	58.66600
	*Triglops macellus**	roughspine sculpin	5	58	135	112	54.97447	60.15398
	Triglops pingeli	ribbed sculpin	79	20	132	49	56.02070	65.02415
	*Triglops scepticus**	spectacled sculpin	15	109	192	143	54.83442	58.99963
Cyclopteridae	*Eumicrotremus andriashevi*	pimpled lumpsucker	8	28	71	42	57.84035	64.66873
	Eumicrotremus orbis	Pacific spiny lumpsucker	4	33	73	54	60.15322	63.28073
	*Eumicrotremus phrynoides**	toad lumpsucker	2	94	100	97	56.83467	57.00203
	Eumicrotremus sp.	spiny lumpsuckers	3	84	90	87	57.35447	60.33813
Gadidae	*Boreogadus saida*	Arctic cod	281	14	147	55	56.67988	65.32702
	Eleginus gracilis	saffron cod	60	11	58	24	59.31787	65.00470
	Gadus macrocephalus	Pacific cod	406	15	192	75	54.70643	65.32702
	Theragra chalcogramma	walleye pollock	424	11	192	72	54.70643	65.32702
Hexagrammidae	*Hexagrammos stelleri*	whitespotted greenling	15	11	46	23	57.65008	64.32090
	*Pleurogrammus monopterygius**	Atka mackerel	2	82	146	114	54.70643	57.66797
Liparidae	*Careproctus phasma*	monster snailfish	4	78	95	83	59.66130	62.31255
	*Careproctus rastrinus**	salmon snailfish	34	72	147	112	55.00190	62.00140
	Careproctus sp.		1	76	76	76	58.99992	58.99992

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Liparidae (cont'd)	*Careproctus* sp. *cf. rastrinus* (Orr et al.)		23	63	147	97	55.33618	62.66702
	*Crystallichthys cyclospilus**	blotched snailfish	1	64	64	64	55.03365	55.03365
	Liparidae	snailfish unident.	2	37	129	83	59.99492	60.33415
	Liparis gibbus	variegated snailfish	133	24	92	56	56.64557	65.32702
	Liparis marmoratus	festive snailfish	10	27	69	41	59.98217	65.01542
	*Liparis ochotensis**	Okhotsk snailfish	2	53	69	61	57.67215	57.68525
	Liparis sp.		8	42	66	54	58.00245	62.32792
	Liparis tunicatus	kelp snailfish	31	14	61	35	60.33195	64.64222
Myctophidae	Myctophidae	lanternfish unident.	1	155	155	155	54.83442	54.83442
Osmeridae	*Mallotus villosus*	capelin	250	20	88	50	55.32478	65.32702
	Osmerus mordax	rainbow smelt	27	11	28	18	59.34092	64.34757
	*Thaleichthys pacificus**	eulachon	35	48	155	106	55.00095	59.67672
Petromyzontidae	*Lampetra tridentata**	Pacific lamprey	1	155	155	155	54.83442	54.83442
Pleuronectidae	*Atheresthes stomias**	arrowtooth flounder	161	49	192	109	54.70643	61.32155
	*Atheresthes evermanni**	Kamchatka flounder	160	48	192	111	54.70643	61.65138
	Reinhardtius hippoglossoides	Greenland turbot	163	37	172	87	56.34622	63.34127
	Hippoglossus stenolepis	Pacific halibut	332	11	192	73	54.70643	65.01010
	*Hippoglossoides elassodon**	flathead sole	256	32	192	92	54.70643	61.65203
	Hippoglossoides robustus	Bering flounder	218	17	162	63	56.32057	65.32702
	Liopsetta glacialis+	Arctic flounder	4	11	15	13	63.65018	64.30037
	*Microstomus pacificus**	Dover sole	7	81	131	105	54.97447	55.98522
	*Glyptocephalus zachirus**	rex sole	68	37	192	117	54.70643	59.00897
	Limanda aspera	yellowfin sole	352	11	100	50	54.70643	65.31457
	Limanda proboscidea	longhead dab	81	11	62	29	57.00165	64.68485
	Limanda sakhalinensis	Sakhalin sole	101	18	84	44	58.68585	65.32702
	Platichthys stellatus	starry flounder	108	11	82	34	54.70643	65.32702
	Lepidopsetta polyxystra	northern rock sole	364	18	162	64	54.70643	65.32702
	*Lepidopsetta bilineata**	southern rock sole	1	80	80	80	55.34085	55.34085
	*Isopsetta isolepis**	butter sole	6	51	82	66	54.70643	56.32808
	Pleuronectes quadrituberculatus	Alaska plaice	359	11	132	52	55.32478	65.32702

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Rajidae	*Bathyraja aleutica**	Aleutian skate	9	109	172	144	54.83442	59.66157
	Bathyraja aleutica egg case	Aleutian skate egg case	1	147	147	147	55.33618	55.33618
	*Bathyraja interrupta**	Bering skate	73	72	192	122	54.70643	61.32155
	Bathyraja interrupta egg case		9	80	192	131	55.00095	59.00897
	*Bathyraja maculata**	whiteblotched skate	1	141	141	141	59.99842	59.99842
	Bathyraja parmifera	Alaska skate	432	19	192	71	54.70643	63.98262
	Bathyraja parmifera egg case	Alaska skate egg case	20	27	192	108	55.33618	63.65297
	*Raja binoculata**	big skate	4	54	109	77	54.70643	55.67847
	Raja binoculata egg case		1	101	101	101	55.34575	55.34575
Salmonidae	*Oncorhynchus gorbuscha**	pink salmon	1	96	96	96	56.01818	56.01818
	Oncorhynchus keta	chum salmon	7	49	116	67	56.99665	62.65408
	Oncorhynchus kisutch+	coho salmon	1	18	18	18	63.99078	63.99078
	*Oncorhynchus tshawytscha**	Chinook salmon	3	53	64	59	55.03365	58.6782
Scorpaenidae	*Sebastes aleutianus**	rougheye rockfish	2	129	135	132	56.32025	56.3558
	*Sebastes alutus**	Pacific ocean perch	9	111	192	140	54.83442	58.68483
	*Sebastes melanostictus**	blackspotted rockfish	4	132	135	134	55.32893	56.01722
	*Sebastes polyspinis**	northern rockfish	3	134	146	138	56.3558	57.66797
	*Sebastes variabilis**	dusky rockfish	1	134	134	134	56.68613	56.68613
	*Sebastes variegatus**	harlequin rockfish	1	135	135	135	56.3558	56.3558
Somniosidae	*Somniosus pacificus**	Pacific sleeper shark	4	92	108	99	56.66863	58.66883
Squalidae	*Squalus acanthias**	spiny dogfish	1	135	135	135	56.3558	56.3558
Stichaeidae	*Acantholumpenus mackayi+*	pighead prickleback	13	11	21	16	61.01755	64.32538
	Chirolophis snyderi+	bearded warbonnet	2	18	26	22	64.00382	64.64992
	Eumesogrammus praecisus	fourline snakeblenny	3	24	60	40	58.32452	64.3373
	Lumpenus fabricii	slender eelblenny	68	11	118	31	57.48798	65.32702
	Lumpenus maculatus	daubed shanny	58	39	155	103	55.67523	62.65517
	Lumpenus medius	stout eelblenny	18	58	85	69	59.65173	63.01703
	Lumpenus sagitta+	snake prickleback	1	20	20	20	61.35608	61.35608
	*Poroclinus rothrocki**	whitebarred prickleback	4	108	126	117	56.66605	57.32612
	Stichaeus punctatus+	Arctic shanny	6	14	30	19	63.65247	64.64992
Trichodontidae	*Trichodon trichodon*	Pacific sandfish	7	20	50	36	57.31005	62.67933
Zaproridae	*Zaprora silenus**	prowfish	4	82	192	142	54.70643	58.68483

Appendix C Table 1. -- Continued.

Family / Subfamily	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Zoarcidae	*Lycodes raridens*	marbled eelpout	67	32	95	60	58.9996	65.01542
	Lycodes palearis	wattled eelpout	163	15	162	79	54.99682	64.32988
	Lycodes mucosus+	saddled eelpout	2	34	35	34	63.978	64.01918
	Lycodes polaris+	Canadian eelpout	6	20	74	53	62.6812	64.00938
	Lycodes turneri	polar eelpout	18	14	53	24	58.6782	65.0047
	Lycodes brevipes	shortfin eelpout	87	54	172	115	55.0019	61.65203
	Gymnelus viridis+	fish doctor	1	33	33	33	63.28073	63.28073
other		fish unident.	2	42	53	47	58.6782	59.33922
other		fish eggs unident.	8	41	77	59	56.65897	59.33528
other		skate egg case unident.	8	37	172	121	54.83442	60.98295

Appendix C Table 2. -- Invertebrate species encountered during the 2010 eastern and northern Bering Sea bottom trawl survey.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Annelida		worm unident.	15	42	192	118	55.65835	64.64222
		tube worm unident.	7	15	117	67	55.33777	63.65018
	Aphrodita negligens		17	110	172	137	58.66548	60.66465
	Aphrodita sp.		8	111	192	142	54.83442	59.00897
	Eunoe depressa	depressed scale worm	37	28	139	82	56.34408	64.30922
	Eunoe nodosa	giant scale worm	171	15	192	77	54.99682	65.01010
	Eunoe sp.		4	42	108	65	57.64770	58.66340
	Notostomum cyclostomum	striped sea leech	5	49	141	88	57.09658	60.01160
	Polychaeta	polychaete worm unident.	16	25	106	55	57.00165	64.33730
	Polynoidae	scale worm unident.	1	87	87	87	59.33277	59.33277
	Sabellidae	sabellid unident.	1	33	33	33	65.00470	65.00470
	Serpulidae	serpulid worm	1	152	152	152	56.01823	56.01823
Arthropoda		shrimp unident.	1	63	63	63	62.32582	62.32582
	Acantholithodes hispidus	fuzzy crab	1	49	49	49	58.01760	58.01760
	Amphipoda	amphipod unident.	17	31	132	66	55.67523	62.67600
	Argis dentata	Arctic argid	55	18	132	69	55.32223	64.34658
	Argis lar	kuro argid	14	20	109	75	55.67847	60.68477
	Argis sp.		149	14	192	61	54.97447	65.32702
	Balanus evermanni	giant barnacle	16	14	192	62	58.32187	65.00470
	Balanus rostratus	beaked barnacle	19	15	47	27	61.32565	64.63747
	Balanus sp.		8	34	152	76	55.98522	58.98370
	Cancer oregonensis	Oregon rock crab	15	77	111	89	55.33777	56.67795
	Chionoecetes bairdi	Tanner crab	252	46	192	94	54.70643	63.67602
	Chionoecetes hybrid	hybrid tanner crab	160	43	192	95	54.70643	62.98117
	Chionoecetes opilio	snow crab	398	11	192	76	54.70643	65.32702
	Crangon communis	twospine crangon	9	47	129	92	58.32432	60.66960
	Crangon dalli	ridged crangon	94	20	192	84	55.32223	62.00140
	Crangon septemspinosa	sevenspine bay shrimp	30	11	155	34	56.02070	64.64992
	Crangon sp.		90	19	172	85	54.83442	63.33627

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Arthropoda	Crangonidae	crangonid shrimp unident.	1	27	27	27	59.02578	59.02578
	Elassochirus cavimanus	purple hermit	21	70	192	124	54.83442	59.66157
	Elassochirus tenuimanus	widehand hermit crab	7	50	80	62	55.32478	57.34273
	Erimacrus isenbeckii	horsehair crab	87	33	109	55	55.32478	61.98697
	Eualus barbatus	barbed eualid	6	131	154	139	54.97447	59.66730
	Eualus macilentus	Greenland shrimp	2	71	139	105	58.66598	58.99960
	Eualus sp.		18	53	86	66	61.33037	63.01703
	Eualus suckleyi	shortscale eualid	6	25	74	43	57.32015	63.65297
	Hapalogaster grebnitzkii		4	14	20	17	63.98847	64.31600
	Hyas coarctatus	circumboreal toad crab	312	15	148	59	55.98522	65.32702
	Hyas lyratus	Pacific lyre crab	170	22	162	91	54.83442	61.98393
	Iphinoe sp.		1	70	70	70	63.33627	63.33627
	Isopoda	isopod unident.	12	11	147	68	55.33618	64.00938
	Labidochirus splendescens	splendid hermit	252	14	192	66	54.83442	65.31457
	Lebbeus groenlandicus	spiny lebbeid	9	20	134	59	55.68590	64.64992
	Lebbeus sp.		2	43	126	84	55.64988	62.67765
	Lithodes aequispinus	golden king crab	2	128	162	145	56.33168	58.32403
	Mysida	opossum shrimps	3	25	41	32	59.33528	59.99050
	Oregonia gracilis	graceful decorator crab	56	24	155	67	54.83442	58.32745
	Pagurus aleuticus	Aleutian hermit	129	27	162	105	54.83442	62.65202
	Pagurus brandti	sponge hermit	70	29	116	56	56.34622	63.30810
	Pagurus capillatus	hairy hermit crab	136	14	155	55	55.32478	65.31457
	Pagurus confragosus	knobbyhand hermit	103	61	192	109	54.83442	60.00048
	Pagurus ochotensis	Alaskan hermit	135	14	81	39	55.34085	64.32538
	Pagurus rathbuni	longfinger hermit	158	34	172	86	56.32580	65.02415
	Pagurus sp.		37	39	172	102	55.65693	59.66750
	Pagurus trigonocheirus	fuzzy hermit crab	265	14	192	68	54.83442	65.32702
	Pandalidae	pandalid shrimp unident.	1	73	73	73	57.18548	57.18548
	Pandalus eous (=*borealis*)	Alaskan pink (=northern) shrimp	133	25	192	113	54.83442	65.01542

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Arthropoda	*Pandalus goniurus*	humpy shrimp	179	14	137	61	56.64557	65.32702
	Pandalus hypsinotus	coonstripe shrimp	3	18	30	24	64.01867	64.32705
	Pandalus jordani	ocean shrimp	4	131	154	142	54.97447	55.32208
	Pandalus sp.		2	68	95	81	55.67523	59.32735
	Pandalus sp. *cf. tridens* (CAS)		1	131	131	131	54.97447	54.97447
	Pandalus tridens	yellowleg pandalid	8	60	155	93	54.83442	60.15322
	Paralithodes camtschaticus	red king crab	118	14	90	45	55.32478	64.64992
	Paralithodes platypus	blue king crab	78	15	132	69	56.67795	65.32702
	Rocinella angusta		2	71	109	90	55.67847	57.00995
	Sclerocrangon boreas	sculptured shrimp	13	15	47	31	63.65247	65.00470
	Sclerocrangon sp.		4	33	63	53	60.15322	63.28073
	Spirontocaris arcuata	Rathbun blade shrimp	1	95	95	95	59.66130	59.66130
	Spirontocaris lamellicornis		15	46	76	63	57.50008	65.02415
	Telmessus cheiragonus	helmet crab	49	11	39	25	57.32308	65.00470
	Thoracica	barnacle unident.	10	24	72	46	56.68552	60.33195
Brachiopoda	*Hemithiris psittacea*	black brachiopod	1	59	59	59	60.35162	60.35162
Cnidaria		hydroid unident.	16	11	94	46	57.65410	65.01542
	Abietinaria greenei	bushy white hydroid	1	28	28	28	60.68555	60.68555
	Actinauge verrilli	reticulate anemone	1	60	60	60	60.97103	60.97103
	Actiniaria	sea anemone unident.	127	11	192	81	54.99682	65.31457
	Actinostolidae		8	70	162	101	59.50453	62.32398
	Aequorea sp.		1	135	135	135	58.66548	58.66548
	Anthozoa		1	80	80	80	56.67795	56.67795
	Aurelia labiata		38	23	75	48	56.67988	64.32988
	Aurelia sp.		43	25	116	60	57.00928	63.68055
	Bathyphelia australis	hot dog sea anemone	1	33	33	33	65.00470	65.00470
	Chrysaora fuscescens	sea nettle	2	28	34	31	62.98648	63.65297
	Chrysaora melanaster		391	11	192	70	54.97447	65.32702
	Corallimorphus sp.		2	30	33	31	64.32705	65.00470

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Cnidaria	*Cribrinopsis fernaldi*	chevron-tentacled anemone	7	15	112	61	60.01232	64.32090
	Cyanea capillata	lion's mane	6	15	55	27	61.32565	64.31973
	Gersemia rubiformis		157	14	89	43	55.32478	65.32702
	Gersemia sp.	sea raspberry	50	31	106	67	56.67988	62.68162
	Halipteris willemoesi		1	95	95	95	55.67523	55.67523
	Liponema brevicornis	tentacle-shedding anemone	63	48	192	118	54.83442	59.66157
	Metridium farcimen	gigantic anemone	65	11	192	70	55.33777	64.64992
	Metridium sp.		56	20	152	58	54.70643	63.28073
	Pennatulacea	sea pen or sea whip unident.	2	111	155	133	54.83442	54.99682
	Phacellophora camtschatica	egg yolk jelly	4	41	133	93	58.99963	63.33627
	Scyphozoa	jellyfish unident.	26	14	162	79	55.32223	64.63747
	Sertulariidae unid.	Sertulariid hydroid	7	14	24	18	63.65018	64.32988
	Stomphia coccinea	swimming anemone	42	42	162	96	55.03365	63.34127
	Stomphia didemon	cowardly anemone	1	86	86	86	61.33807	61.33807
	Stomphia sp.		23	15	152	65	55.32478	65.31457
	Urticina crassicornis	mottled anemone	52	15	152	49	55.32478	65.32702
	Urticina sp.		15	58	108	82	59.33277	62.01412
	Virgularia sp.	smoothstem seawhip	1	141	141	141	59.99842	59.99842
	Virgulariidae	sea whip unident.	7	113	135	123	55.66142	57.30292
Ctenophora		comb jelly unident.	1	44	44	44	58.66682	58.66682
Echinodermata		sand dollar unident.	1	80	80	80	56.84510	56.84510
	Allocentrotus fragilis	orange-pink sea urchin	1	135	135	135	55.66142	55.66142
	Amphiophiura nodosa		6	11	60	27	57.99098	64.66873
	Asterias amurensis	purple-orange sea star	338	14	155	56	54.83442	65.31457
	Asteroidea	sea star unident.	4	26	74	49	56.98818	64.64992
	Bathyplotes sp.		1	155	155	155	54.83442	54.83442
	Ceramaster sp.		2	154	155	154	54.83442	55.00095
	Ceramaster stellatus		1	152	152	152	56.01823	56.01823
	Crossaster papposus	rose sea star	59	14	162	61	54.83442	65.32702

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Echinodermata	*Ctenodiscus crispatus*	common mud star	76	80	172	122	54.97447	61.65138
	Cucumaria fallax	sea football	28	26	93	65	55.98522	64.64992
	Diplopteraster multipes	pincushion sea star	6	134	192	153	56.01823	58.68483
	Dipsacaster borealis	northern sea star	3	129	162	144	56.99318	59.00897
	Echinarachnius parma	parma sand dollar	41	22	155	62	54.70643	64.34658
	Evasterias echinosoma	giant sea star	44	11	95	40	55.67523	65.31457
	Evasterias troschelii	mottled sea star	4	45	80	66	56.67795	60.69267
	Gorgonocephalus eucnemis	basketstar	277	31	162	77	54.83442	63.34127
	Gorgonocephalus sp. *cf. arcticus*		34	18	53	30	61.98393	65.32702
	Henricia asthenactis		1	155	155	155	56.31765	56.31765
	Henricia sanguinolenta	sanguine sea star	10	35	74	58	57.00165	63.98623
	Henricia sp.		41	33	192	100	54.83442	63.30810
	Henricia spiculifera	spiny Henricia	1	155	155	155	56.31765	56.31765
	Henricia tumida	tumid sea star	29	14	55	31	62.98648	65.32702
	Holothuroidea	sea cucumber unident.	21	26	117	48	56.64557	65.32702
	Leptasterias arctica		167	15	162	59	56.65633	65.32702
	Leptasterias groenlandica		40	25	139	54	57.01418	64.34282
	Leptasterias polaris		230	14	172	73	56.34622	65.32702
	Leptasterias sp.		17	14	65	36	61.68150	65.32702
	Leptychaster anomalus		9	93	172	130	54.83442	59.66157
	Lethasterias nanimensis	blackspined sea star	112	11	192	65	55.34085	65.32702
	Molpadia intermedia	sweet sea potato	2	129	132	130	56.02070	56.32025
	Molpadia sp.		3	76	134	113	54.97447	61.67248
	Ophiopholis aculeata	ubiquitous brittle star	11	36	192	98	56.66605	64.33730
	Ophiopholis sp.		1	63	63	63	60.28822	60.28822
	Ophiura cryptolepis		1	56	56	56	57.98882	57.98882
	Ophiura sarsi	notched brittlestar	130	27	155	77	54.83442	65.31457
	Ophiuridae		1	68	68	68	58.34862	58.34862
	Ophiuroidea	brittlestarfish unident.	3	68	155	125	56.01823	58.34862

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Echinodermata	*Pedicellaster magister*	majestic sea star	1	155	155	155	54.83442	54.83442
	Pentamera lissoplaca	crescent sea cucumber	2	63	68	65	57.32115	57.65233
	Pentamera sp.		1	15	15	15	63.65247	63.65247
	Pentamera sp. A (Clark 2006)		3	60	75	68	56.67988	58.33757
	Pseudarchaster parelii	scarlet sea star	10	116	192	144	54.83442	58.68483
	Pseudostichopus mollis	sandy sea cucumber	1	78	78	78	56.00422	56.00422
	Psolus fabricii	brownscaled sea cucumber	11	14	38	30	63.70007	65.00470
	Psolus sp.		2	33	59	46	60.35162	63.28073
	Psolus squamatus	whitescaled sea cucumber	2	60	75	67	59.99862	60.15322
	Pteraster obscurus	obscure sea star	79	26	162	89	55.03365	65.32702
	Pteraster sp.		5	80	192	132	54.83442	59.66730
	Pteraster tesselatus		5	26	107	68	56.64540	64.64992
	Solaster dawsoni	morning sun sea star	1	63	63	63	60.28822	60.28822
	Solaster sp.		1	155	155	155	54.83442	54.83442
	Solaster sp. F (Clark)	Fisher sun star	1	52	52	52	63.98623	63.98623
	Solaster stimpsoni	striped sun sea star	1	52	52	52	63.98623	63.98623
	Strongylocentrotus droebachiensis	green sea urchin	88	19	172	91	54.83442	63.33627
	Strongylocentrotus sp.		113	11	192	63	55.34085	65.32702
Ectoprocta	*Alcyonidium pedunculatum*		24	27	111	54	54.99682	64.33730
	Alcyonidium sp.		1	38	38	38	64.34282	64.34282
	Bryozoa	bryozoan unident.	67	19	152	59	56.01823	62.68162
	Bugula californica		8	21	92	40	58.66598	65.31457
	Cellepora ventricosa	coral bryozoan	3	34	36	35	63.70007	64.33730
	Dendrobeania sp.		5	15	71	49	57.65410	65.00470
	Eucratea loricata	feathery bryozoan	13	24	69	45	56.66640	61.65305
	Flustra serrulata	leafy bryozoan	55	15	82	49	56.65633	65.32702
	Flustrellidra corniculata		11	26	55	38	63.67602	65.31457
	Leieschara orientalis		1	59	59	59	60.35162	60.35162
	Rhamphostomella costata	ribbed bryozoan	59	21	113	55	56.32438	65.32702

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca		trochid unident.	1	68	68	68	62.98117	62.98117
	Aforia circinata	keeled aforia	46	81	162	116	54.97447	61.32155
	Aforia sp.		16	98	148	126	56.65650	59.66750
	Amauropsis purpurea	purple moon snail	1	36	36	36	57.97405	57.97405
	Amicula vestita		1	59	59	59	60.35162	60.35162
	Antiplanes sp.		1	192	192	192	58.68483	58.68483
	Arctomelon sp.		1	155	155	155	54.83442	54.83442
	Arctomelon stearnsii	Alaska volute	2	162	192	177	58.32403	58.68483
	Astarte arctica		3	17	42	29	64.32538	64.64222
	Astarte sp.		1	59	59	59	60.35162	60.35162
	Benthoctopus leioderma	smoothskin octopus	4	33	115	79	58.32187	63.28073
	Beringius beringii		39	14	172	71	55.33618	64.68485
	Beringius frielei		3	95	154	119	55.00095	59.66130
	Beringius rotundus	rotund whelk	2	133	139	136	55.32208	58.99963
	Beringius sp.		54	33	155	97	54.83442	65.31457
	Beringius sp. F (McLean & Clark)		1	141	141	141	56.99318	56.99318
	Beringius sp. J (McLean & Clark)		1	121	121	121	56.32455	56.32455
	Beringius stimpsoni		7	14	70	48	57.83157	64.33730
	Berryteuthis magister	magistrate armhook squid	1	192	192	192	58.68483	58.68483
	Boreotrophon beringi	Bering trophon	7	24	85	63	56.31975	64.33730
	Boreotrophon clathratus	clathrate trophon	2	70	84	77	56.66140	58.00017
	Boreotrophon sp.		2	78	78	78	56.65633	62.31255
	Buccinum angulosum	angular whelk	111	24	147	78	56.34938	65.32702
	Buccinum glaciale	glacial whelk	4	28	36	31	63.98052	64.33730
	Buccinum oedematum	swollen whelk	13	58	147	98	57.32612	61.00600
	Buccinum plectrum	sinuous whelk	27	25	146	66	56.35580	63.31945
	Buccinum polare	polar whelk	123	24	162	67	56.67988	65.32702
	Buccinum scalariforme	ladder whelk	174	21	172	88	54.70643	65.32702
	Buccinum sp.		33	29	102	60	56.65633	63.98052

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca	*Buccinum* sp. Eggs		20	27	53	37	61.64993	65.32702
	Bulbus fragilis	fragile moonsnail	1	141	141	141	56.99318	56.99318
	Chlamys rubida	reddish scallop	3	64	155	99	54.83442	56.67795
	Chlamys sp.		8	28	162	67	58.32403	63.98623
	Clinocardium californiense	California cockle	3	15	18	16	63.65018	63.98847
	Clinocardium ciliatum	hairy cockle	29	26	136	75	55.68590	64.01918
	Clinocardium sp.		5	35	84	65	57.01368	61.00600
	Clinopegma magnum	helmet whelk	48	55	147	93	56.32438	62.01412
	Colus aphelus	oblique whelk	2	120	124	122	55.32223	55.98877
	Colus halli	shrew whelk	5	38	84	52	56.66140	64.67860
	Colus herendeenii	thin-ribbed whelk	19	33	172	117	56.31765	63.31822
	Colus hypolispus		2	61	65	63	59.98402	60.31590
	Colus jordani		1	129	129	129	56.32025	56.32025
	Colus sp.		26	46	137	96	54.99682	61.99648
	Colus spitzbergensis	thick-ribbed whelk	2	35	59	47	60.35162	64.01647
	Crepidula grandis	great slippersnail	16	21	74	57	56.97550	64.33730
	Cryptochiton stelleri	giant Pacific chiton	9	26	52	34	63.31945	65.00470
	Cryptonatica (=*Natica*) *aleutica*	Aleutian moonsnail	9	23	132	76	56.00422	65.02415
	Cryptonatica (=*Natica*) *russa*	rusty moonsnail	9	62	106	75	58.65498	62.00140
	Cryptonatica sp.		42	40	137	78	57.00928	63.34127
	Cyclocardia crassidens	thick carditid	1	38	38	38	64.66873	64.66873
	Cyclocardia ovata		1	59	59	59	60.35162	60.35162
	Cyclocardia sp.		3	39	116	71	57.01075	60.35162
	Decapodiformes	squid unident.	2	132	155	143	54.83442	55.32893
	Dendronotus dalli	Dall's dendronotid	39	24	162	83	59.83052	65.32702
	Dendronotus sp.		5	43	53	46	62.35522	62.99800
	Doridiidae	dorid nudibranch unident.	3	30	66	48	57.64770	63.67770
	Euspira pallida	pale moonsnail	19	25	124	71	55.98877	61.98362
	Fusitriton oregonensis	Oregon triton	95	54	192	111	54.70643	59.99842

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca	gastropod eggs	snail eggs	256	20	172	75	54.97447	63.34127
	Gastropoda	snail unident.	2	74	116	95	57.98648	62.98033
	Hiatella arctica	Arctic hiatella	32	15	92	56	56.67795	64.32538
	Lamellaria sp.		20	23	84	38	61.00600	65.32702
	Lamellariidae	lamellarid unident.	1	69	69	69	59.98217	59.98217
	Macoma calcarea	chalky macoma	3	25	77	50	57.85343	61.31947
	Macoma nasuta	bent-nose macoma	2	38	55	46	63.67602	64.30922
	Macoma sp.		4	34	84	56	57.32462	61.31817
	Mactromeris polynyma	Arctic surfclam	78	14	78	41	55.67462	65.02415
	Margarites costalis	boreal rosy margarite	1	59	59	59	60.35162	60.35162
	Modiolus modiolus	northern horsemussel	14	14	78	48	56.00422	64.63747
	Musculus discors	discordant mussel	23	32	73	59	57.34807	61.31397
	Mya baxteri		1	18	18	18	64.00382	64.00382
	Mytilus edulis	blue mussel	3	34	47	38	57.98402	58.33355
	Mytilus sp.		5	24	74	47	57.01773	59.33730
	Natica sp.		12	40	92	51	56.32438	62.99800
	Naticidae eggs	moonsnail eggs unid.	52	14	132	65	59.33277	65.02415
	Neptunea borealis		81	27	135	67	54.99682	65.32702
	Neptunea gyroscopoides		2	69	73	71	58.35680	58.65498
	Neptunea heros		191	11	94	51	56.67515	65.32702
	Neptunea lyrata	lyre whelk	137	25	172	90	54.70643	60.66465
	Neptunea pribiloffensis	Pribilof whelk	159	40	192	104	54.97447	62.01412
	Neptunea sp.		17	15	155	58	54.83442	63.65018
	Neptunea sp. D (Clark & McLean)		3	74	86	81	57.67113	58.00168
	Neptunea sp. eggs		46	14	53	30	61.64993	65.32702
	Neptunea sp. F (Clark & McLean)		1	108	108	108	57.32612	57.32612
	Neptunea ventricosa	fat whelk	176	14	124	51	55.32223	65.32702
	Nuculana conceptionis		1	81	81	81	56.99288	56.99288
	Nudibranchia	nudibranch unident.	30	15	162	63	56.67988	64.32090

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca	*Octopus dofleini*	giant octopus	38	69	192	124	54.83442	62.00140
	Onchidiopsis sp. A (Clark & McLean)		7	58	78	66	59.65522	60.68477
	Onchidiopsis sp. B (Clark & McLean)		5	68	72	69	58.00140	63.33627
	Otukaia kiheiziebisu		1	36	36	36	64.33730	64.33730
	Patinopecten caurinus	weathervane scallop	12	93	135	109	54.99682	57.30292
	Plicifusus griseus	gray whelk	1	109	109	109	56.99827	56.99827
	Plicifusus kroyeri		48	36	146	103	55.98522	64.33730
	Plicifusus oceanodromae	seahorse whelk	1	32	32	32	64.34658	64.34658
	Plicifusus sp.		11	63	148	94	56.67795	60.28822
	Pododesmus macroschisma	Alaska falsejingle	3	62	80	70	56.67795	57.32462
	Polyplacophora	chiton unident.	1	40	40	40	62.67600	62.67600
	Pyrulofusus deformis	warped whelk	44	17	162	81	54.83442	64.64992
	Pyrulofusus melonis		45	66	162	120	55.00190	61.32155
	Rossia pacifica	eastern Pacific bobtail	6	134	192	156	56.01823	59.99842
	Sasakiopus salebrosus	pygmy benthoctopus	12	58	129	86	59.33225	62.98033
	Saxidomus gigantea	butter clam	11	40	67	49	55.67462	60.01215
	Serripes groenlandicus	Greenland cockle	30	29	162	85	56.01818	62.93715
	Serripes laperousii	broad cockle	9	15	68	41	58.34617	64.00938
	Serripes notabilis	oblique smoothcockle	14	20	172	75	58.99968	63.67770
	Serripes sp.		10	38	136	75	58.35073	62.68162
	Siliqua alta	Alaska razor	16	22	47	34	58.01057	59.99050
	Tachyrhynchus erosus	eroded turretsnail	1	53	53	53	58.67820	58.67820
	Tellina lutea	Alaska great-tellin	45	20	62	42	55.67462	61.65880
	Tellina sp.		1	68	68	68	62.98117	62.98117
	Tochuina tetraquetra	giant orange tochui	5	30	52	37	63.70007	64.33730
	Trichotropis bicarinata	two-keel hairysnail	3	31	59	41	60.35162	64.68485
	Tritonia diomedea	rosy tritonia	8	46	141	70	56.65633	62.32177
	Tritonia festiva	festive Tritonia	29	58	147	79	59.83052	62.68120
	Tritonia sp.		3	29	87	67	56.31975	61.01843

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Mollusca	*Velutina* sp.		2	69	70	69	57.67215	57.81798
	Volutopsius fragilis	fragile whelk	14	47	155	88	55.66142	58.33757
	Volutopsius middendorffii	tulip whelk	4	60	75	68	56.67988	57.67633
	Volutopsius sp.		53	36	155	102	54.97447	59.66750
	Volutopsius stefanssoni	shouldered whelk	8	24	74	55	56.98818	65.31457
	Yoldia seminuda	crisscrossed yoldia	8	61	103	75	56.32580	57.34273
	Yoldia sp.		4	35	68	50	57.00165	62.98117
Nemertea	Nemertea	nemertean worm unident.	5	53	109	70	55.67847	62.98033
Other		empty bivalve shells	372	14	192	66	54.70643	65.31457
		empty gastropod shells	456	11	192	71	54.70643	65.32702
		unsorted catch and debris	3	36	86	60	56.34622	64.33730
		unsorted shab	3	41	55	47	58.28193	61.65798
Porifera	*Aphrocallistes vastus*	clay pipe sponge	1	155	155	155	56.31765	56.31765
	Mycale sp.		1	192	192	192	58.68483	58.68483
	Phakellia beringensis	hat sponge	2	108	126	117	57.32612	58.65285
	Polymastia sp.		1	155	155	155	54.83442	54.83442
	Porifera	sponge unident.	113	19	192	79	54.99682	65.31457
	Porifera unid. erect	Erect sponge morphotype	8	15	52	28	60.66808	64.31973
	Porifera unid. tubular	Tubular sponge morphotype	1	36	36	36	63.70007	63.70007
	Suberites sp.		2	51	54	52	55.32478	55.67462
Priapula		priapulid worm unident.	1	71	71	71	58.99960	58.99960
Sipuncula		peanut worm unid.	10	31	113	58	56.34507	64.68485
	Phascolosomatidae		1	77	77	77	56.34408	56.34408
Tunicata		compound ascidian unident.	16	24	155	70	56.66605	63.30810
	Aplidium sp. A (Clark 2006)	sea glob	149	11	152	49	55.32478	65.31457
	Ascidiacea	tunicate unident.	32	21	192	58	56.32438	65.01010
	Boltenia ovifera		171	19	144	55	55.00190	65.01542
	Distaplia occidentalis		19	11	39	26	61.32565	65.31457
	Distaplia smithi		12	15	53	33	63.64828	65.32702
	Distaplia sp. A (Clark 2006)		1	25	25	25	61.98393	61.98393

Appendix C Table 2. -- Continued.

Grouping	Scientific name	Common name	Number stations present	Bottom depth (m)			Latitude range	
				Min. depth	Max. depth	Avg. depth	Southern	Northern
Tunicata	*Halocynthia aurantium*	sea peach	53	28	82	63	56.64557	65.01010
	Halocynthia sp.	sea peach unident.	1	54	54	54	58.00245	58.00245
	Molgula griffithsii	sea grape	1	31	31	31	60.33195	60.33195
	Styela rustica	sea potato	199	14	113	48	56.34507	65.31457
	Synoicum sp.	sea blob	20	15	53	36	63.31945	65.32702
	Thaliacea	salp unident.	3	38	80	65	56.65633	64.66873
Platyhelminthidae	Platyhelminthes	flatworm unident.	1	117	117	117	57.33667	57.33667

Appendix D: Population Estimates by Sex and Size Groups for Principal Fish Species

Appendix D presents population estimates of the numbers of individuals from the 2010 eastern and northern Bering Sea survey area by sex and size group for principal fish species.

List of Tables

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Appendix D Table 1b -- Northern Bering Sea walleye pollock

Appendix D Table 2a -- Eastern Bering Sea Pacific cod
Appendix D Table 2b -- Northern Bering Sea Pacific cod

Appendix D Table 3a -- Eastern Bering Sea yellowfin sole
Appendix D Table 3b -- Northern Bering Sea yellowfin sole

Appendix D Table 4a -- Eastern Bering Sea southern and northern rock sole
Appendix D Table 4b -- Northern Bering Sea southern and northern rock sole

Appendix D Table 5 -- Eastern Bering Sea flathead sole

Appendix D Table 6a -- Eastern Bering Sea Bering flounder
Appendix D Table 6b -- Northern Bering Sea Bering flounder

Appendix D Table 7a -- Eastern Bering Sea Alaska plaice
Appendix D Table 7b -- Northern Bering Sea Alaska plaice

Appendix D Table 8a -- Eastern Bering Sea Greenland turbot
Appendix D Table 8b -- Northern Bering Sea Greenland turbot

Appendix D Table 9 -- Eastern Bering Sea arrowtooth flounder

Appendix D Table 10 -- Eastern Bering Sea Kamchatka flounder

Appendix D Table 11a -- Eastern Bering Sea Pacific halibut
Appendix D Table 11b -- Northern Bering Sea Pacific halibut

Appendix D Table 1a. -- Population estimates by sex and size for **walleye pollock** (*Theragra chalcogramma*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	0	0	121,489	121,489	0.0000	0.0000
70	0	0	91,424	91,424	0.0000	0.0000
80	0	0	1,092,002	1,092,002	0.0002	0.0002
90	0	0	4,213,487	4,213,487	0.0008	0.0010
100	0	0	14,025,630	14,025,630	0.0026	0.0036
110	0	0	31,521,838	31,521,838	0.0058	0.0095
120	0	0	35,513,475	35,513,475	0.0066	0.0160
130	0	0	46,174,825	46,174,825	0.0086	0.0246
140	0	0	67,268,512	67,268,512	0.0125	0.0371
150	0	0	79,215,061	79,215,061	0.0147	0.0517
160	17,759,329	12,302,414	38,127,754	68,189,496	0.0126	0.0644
170	19,837,564	10,177,735	14,210,442	44,225,741	0.0082	0.0726
180	7,967,590	6,647,761	2,236,593	16,851,944	0.0031	0.0757
190	7,375,581	7,054,577	1,654,796	16,084,954	0.0030	0.0787
200	7,155,385	7,503,701	1,307,634	15,966,721	0.0030	0.0816
210	5,053,992	3,281,295	1,071,406	9,406,693	0.0017	0.0834
220	6,238,310	5,505,311	481,983	12,225,603	0.0023	0.0856
230	6,327,403	4,327,109	404,679	11,059,191	0.0020	0.0877
240	6,953,681	5,244,180	58,409	12,256,270	0.0023	0.0900
250	8,379,355	4,955,080	119,850	13,454,284	0.0025	0.0925
260	7,815,132	5,389,340	0	13,204,472	0.0024	0.0949
270	5,061,386	5,585,145	0	10,646,531	0.0020	0.0969
280	9,510,319	5,518,139	0	15,028,459	0.0028	0.0997
290	6,788,827	7,983,150	0	14,771,977	0.0027	0.1024
300	6,548,842	6,337,897	0	12,886,739	0.0024	0.1048
310	11,331,215	9,139,363	0	20,470,578	0.0038	0.1086
320	8,608,162	5,662,944	0	14,271,107	0.0026	0.1112
330	10,331,914	6,127,057	0	16,458,971	0.0030	0.1143
340	11,600,250	11,168,599	0	22,768,848	0.0042	0.1185
350	25,507,559	17,441,490	0	42,949,050	0.0080	0.1264
360	58,024,530	36,089,401	0	94,113,931	0.0174	0.1439
370	83,541,627	52,410,903	34,063	135,986,593	0.0252	0.1691
380	163,228,072	97,303,961	0	260,532,033	0.0483	0.2174
390	178,741,511	150,303,503	0	329,045,014	0.0610	0.2783
400	271,465,479	180,086,840	0	451,552,319	0.0837	0.3620
410	219,798,035	171,106,590	0	390,904,625	0.0724	0.4344
420	207,403,237	173,982,379	0	381,385,616	0.0707	0.5051
430	156,481,442	121,604,731	0	278,086,173	0.0515	0.5566
440	140,778,100	117,477,899	0	258,255,999	0.0479	0.6045
450	78,844,886	91,209,900	0	170,054,786	0.0315	0.6360
460	93,050,362	94,526,724	0	187,577,086	0.0348	0.6707
470	49,866,407	61,759,350	0	111,625,757	0.0207	0.6914
480	63,148,783	50,870,617	0	114,019,400	0.0211	0.7125
490	58,234,329	39,297,875	0	97,532,205	0.0181	0.7306
500	83,613,374	51,206,777	0	134,820,151	0.0250	0.7556
510	72,599,355	42,299,161	0	114,898,516	0.0213	0.7769

Appendix D Table 1a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
520	97,743,957	63,353,510	0	161,097,467	0.0298	0.8067
530	67,105,714	52,489,270	0	119,594,984	0.0222	0.8289
540	85,148,183	77,702,743	0	162,850,926	0.0302	0.8591
550	60,617,784	58,060,679	0	118,678,463	0.0220	0.8810
560	57,659,058	62,165,370	0	119,824,428	0.0222	0.9033
570	38,785,314	46,805,205	0	85,590,519	0.0159	0.9191
580	32,130,650	58,832,112	0	90,962,762	0.0169	0.9360
590	24,447,612	33,271,601	0	57,719,213	0.0107	0.9467
600	24,755,715	33,065,969	0	57,821,683	0.0107	0.9574
610	15,488,800	30,065,759	0	45,554,560	0.0084	0.9658
620	12,453,254	29,693,932	0	42,147,186	0.0078	0.9736
630	10,517,164	16,352,098	0	26,869,263	0.0050	0.9786
640	7,871,052	19,550,764	0	27,421,816	0.0051	0.9837
650	6,040,268	12,446,520	0	18,486,788	0.0034	0.9871
660	4,211,416	11,451,116	0	15,662,532	0.0029	0.9900
670	1,255,608	6,815,456	0	8,071,065	0.0015	0.9915
680	2,429,606	7,230,119	0	9,659,725	0.0018	0.9933
690	1,834,937	3,737,293	0	5,572,231	0.0010	0.9943
700	1,686,595	4,714,311	0	6,400,907	0.0012	0.9955
710	922,303	2,040,276	0	2,962,579	0.0005	0.9961
720	707,374	4,668,996	0	5,376,370	0.0010	0.9971
730	999,711	2,226,526	0	3,226,237	0.0006	0.9977
740	442,736	2,163,545	0	2,606,281	0.0005	0.9981
750	501,819	1,798,963	0	2,300,782	0.0004	0.9986
760	339,574	1,371,102	0	1,710,676	0.0003	0.9989
770	145,448	1,041,679	0	1,187,127	0.0002	0.9991
780	31,375	1,418,752	29,345	1,479,472	0.0003	0.9994
790	194,409	824,116	0	1,018,525	0.0002	0.9996
800	120,046	854,531	0	974,577	0.0002	0.9997
810	28,923	493,473	0	522,396	0.0001	0.9998
820	30,147	342,746	0	372,894	0.0001	0.9999
830	0	192,581	0	192,581	0.0000	0.9999
840	0	91,144	0	91,144	0.0000	1.0000
850	0	78,546	0	78,546	0.0000	1.0000
Total	**2,731,617,878**	**2,326,416,617**	**338,974,697**	**5,397,009,192**	**1.0000**	**1.0000**

Appendix D Table 1b. -- Population estimates by sex and size for **walleye pollock** (*Theragra chalcogramma*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
70	0	0	28,736	28,736	0.0004	0.0004
80	0	0	529,327	529,327	0.0081	0.0085
90	0	0	4,515,537	4,515,537	0.0687	0.0772
100	0	0	9,590,484	9,590,484	0.1460	0.2232
110	0	0	14,148,246	14,148,246	0.2153	0.4385
120	0	0	14,251,056	14,251,056	0.2169	0.6554
130	0	0	9,294,727	9,294,727	0.1415	0.7968
140	0	0	5,278,825	5,278,825	0.0803	0.8772
150	0	0	990,340	990,340	0.0151	0.8923
160	0	35,004	143,492	178,495	0.0027	0.8950
170	0	35,097	0	35,097	0.0005	0.8955
180	31,488	34,860	0	66,347	0.0010	0.8965
190	0	68,492	0	68,492	0.0010	0.8976
210	63,789	0	0	63,789	0.0010	0.8985
650	62,821	0	0	62,821	0.0010	0.8995
670	62,770	0	0	62,770	0.0010	0.9004
680	59,142	0	0	59,142	0.0009	0.9013
690	67,016	127,151	0	194,167	0.0030	0.9043
700	339,554	90,169	0	429,724	0.0065	0.9108
710	118,492	322,051	0	440,543	0.0067	0.9175
720	234,815	281,971	0	516,786	0.0079	0.9254
730	287,336	156,850	0	444,186	0.0068	0.9322
740	193,757	447,256	0	641,012	0.0098	0.9419
750	228,007	377,327	0	605,334	0.0092	0.9511
760	136,210	504,441	0	640,651	0.0098	0.9609
770	165,108	541,859	0	706,967	0.0108	0.9716
780	31,018	432,481	0	463,499	0.0071	0.9787
790	0	438,425	0	438,425	0.0067	0.9854
800	35,097	308,486	0	343,583	0.0052	0.9906
810	0	264,377	0	264,377	0.0040	0.9946
820	0	114,850	0	114,850	0.0017	0.9964
830	0	137,275	0	137,275	0.0021	0.9985
840	0	34,059	0	34,059	0.0005	0.9990
850	0	0	0	0	0.0000	0.9990
860	0	67,160	0	67,160	0.0010	1.0000
Total	**2,116,419**	**4,819,641**	**58,770,770**	**65,706,830**	**1.0000**	**1.0000**

Appendix D Table 2a. -- Population estimates by sex and size for **Pacific cod** (*Gadus macrocephalus*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
90	0	0	81,695	81,695	0.0001	0.0001
100	0	0	555,982	555,982	0.0006	0.0007
110	0	0	2,065,487	2,065,487	0.0023	0.0030
120	0	0	2,813,657	2,813,657	0.0031	0.0062
130	0	0	3,408,422	3,408,422	0.0038	0.0100
140	0	0	5,873,114	5,873,114	0.0066	0.0165
150	0	0	5,853,054	5,853,054	0.0065	0.0231
160	2,612,239	3,337,080	650,279	6,599,598	0.0074	0.0304
170	2,094,919	3,179,407	184,608	5,458,933	0.0061	0.0365
180	1,892,278	1,411,965	317,794	3,622,037	0.0040	0.0406
190	605,543	1,184,313	0	1,789,856	0.0020	0.0426
200	1,089,856	812,995	32,757	1,935,607	0.0022	0.0447
210	995,885	108,100	0	1,103,986	0.0012	0.0459
220	582,489	1,027,162	0	1,609,651	0.0018	0.0477
230	1,550,043	2,156,034	0	3,706,077	0.0041	0.0519
240	2,903,097	4,182,299	0	7,085,396	0.0079	0.0598
250	7,433,747	7,416,983	0	14,850,730	0.0166	0.0764
260	14,594,052	8,224,429	0	22,818,481	0.0255	0.1018
270	14,858,272	13,513,868	0	28,372,140	0.0317	0.1335
280	20,980,962	20,910,058	0	41,891,021	0.0468	0.1803
290	24,718,749	25,895,064	0	50,613,812	0.0565	0.2367
300	23,129,493	26,480,965	0	49,610,458	0.0554	0.2921
310	25,585,545	20,860,420	0	46,445,965	0.0518	0.3440
320	27,794,903	18,784,443	0	46,579,346	0.0520	0.3960
330	19,147,866	19,065,997	0	38,213,863	0.0427	0.4386
340	15,994,058	16,048,123	0	32,042,181	0.0358	0.4744
350	11,557,874	10,350,953	0	21,908,827	0.0245	0.4988
360	8,882,940	11,032,444	0	19,915,385	0.0222	0.5211
370	6,657,975	6,078,123	0	12,736,098	0.0142	0.5353
380	5,062,403	6,288,563	0	11,350,966	0.0127	0.5479
390	4,303,932	3,577,622	0	7,881,554	0.0088	0.5567
400	4,417,766	4,447,880	0	8,865,647	0.0099	0.5666
410	4,181,157	5,047,463	0	9,228,620	0.0103	0.5769
420	6,509,195	8,132,348	0	14,641,543	0.0163	0.5933
430	7,550,431	8,033,123	0	15,583,554	0.0174	0.6107
440	11,252,744	16,023,230	0	27,275,975	0.0304	0.6411
450	8,359,801	9,684,495	0	18,044,296	0.0201	0.6613
460	10,217,692	9,464,600	0	19,682,292	0.0220	0.6832
470	9,511,073	9,130,357	0	18,641,430	0.0208	0.7040
480	9,093,138	9,514,096	0	18,607,234	0.0208	0.7248
490	6,495,692	7,958,471	0	14,454,163	0.0161	0.7409
500	7,346,133	8,605,968	0	15,952,101	0.0178	0.7587
510	4,987,443	7,529,289	0	12,516,732	0.0140	0.7727
520	7,862,086	9,662,079	0	17,524,165	0.0196	0.7923
530	5,965,428	7,449,421	0	13,414,849	0.0150	0.8072
540	9,562,240	8,711,157	0	18,273,397	0.0204	0.8276

Appendix D Table 2a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
550	8,818,572	8,941,943	0	17,760,515	0.0198	0.8475
560	8,574,672	7,815,775	0	16,390,448	0.0183	0.8658
570	5,732,418	5,507,797	0	11,240,215	0.0125	0.8783
580	8,609,046	7,930,541	0	16,539,586	0.0185	0.8968
590	7,041,344	6,217,155	0	13,258,499	0.0148	0.9116
600	5,341,513	6,459,391	0	11,800,904	0.0132	0.9247
610	5,325,295	3,321,864	0	8,647,159	0.0097	0.9344
620	4,074,520	6,575,239	0	10,649,759	0.0119	0.9463
630	3,186,476	3,870,850	0	7,057,326	0.0079	0.9542
640	3,252,585	4,622,016	0	7,874,601	0.0088	0.9629
650	1,809,212	3,038,323	0	4,847,534	0.0054	0.9684
660	2,709,227	2,348,014	0	5,057,240	0.0056	0.9740
670	2,079,290	1,397,475	0	3,476,765	0.0039	0.9779
680	1,217,945	1,444,386	0	2,662,331	0.0030	0.9808
690	689,740	1,271,670	0	1,961,410	0.0022	0.9830
700	1,007,424	1,333,047	0	2,340,470	0.0026	0.9856
710	1,538,136	634,512	0	2,172,648	0.0024	0.9881
720	571,645	576,721	0	1,148,366	0.0013	0.9894
730	330,893	516,531	0	847,425	0.0009	0.9903
740	567,234	245,740	0	812,975	0.0009	0.9912
750	703,791	306,959	0	1,010,750	0.0011	0.9923
760	438,638	801,274	0	1,239,911	0.0014	0.9937
770	91,498	214,675	0	306,173	0.0003	0.9941
780	471,821	383,125	0	854,946	0.0010	0.9950
790	149,749	120,585	0	270,334	0.0003	0.9953
800	61,170	135,010	0	196,180	0.0002	0.9955
810	79,412	453,060	0	532,472	0.0006	0.9961
820	136,151	133,229	0	269,380	0.0003	0.9964
830	146,376	124,265	0	270,640	0.0003	0.9967
840	29,824	47,005	0	76,829	0.0001	0.9968
850	188,365	201,799	0	390,164	0.0004	0.9973
860	113,079	403,194	0	516,273	0.0006	0.9978
870	0	29,021	0	29,021	0.0000	0.9979
880	57,703	224,014	0	281,717	0.0003	0.9982
890	18,563	41,563	0	60,126	0.0001	0.9982
900	110,934	137,021	0	247,954	0.0003	0.9985
910	0	120,515	0	120,515	0.0001	0.9987
920	29,169	49,460	0	78,629	0.0001	0.9987
930	74,158	149,969	0	224,127	0.0003	0.9990
940	0	57,538	0	57,538	0.0001	0.9991
960	36,727	176,405	0	213,132	0.0002	0.9993
970	115,505	0	0	115,505	0.0001	0.9994
980	0	86,583	0	86,583	0.0001	0.9995
990	25,157	140,100	0	165,256	0.0002	0.9997
1000	126,719	0	0	126,719	0.0001	0.9998
1050	0	58,036	0	58,036	0.0001	0.9999

Appendix D Table 2a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
1080	0	51,603	0	51,603	0.0001	1.0000
1100	0	25,157	0	25,157	0.0000	1.0000
Total	**434,022,833**	**440,061,543**	**21,836,847**	**895,921,223**	**1.0000**	**1.0000**

Appendix D Table 2b. -- Population estimates by sex and size for **Pacific cod** (*Gadus macrocephalus*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	0	0	33,185	33,185	0.0037	0.0037
100	0	0	101,306	101,306	0.0114	0.0151
110	0	0	128,054	128,054	0.0144	0.0295
120	0	0	136,378	136,378	0.0153	0.0448
130	0	0	441,593	441,593	0.0496	0.0945
140	0	0	406,791	406,791	0.0457	0.1402
150	0	0	379,548	379,548	0.0427	0.1829
160	0	63,706	0	63,706	0.0072	0.1900
170	62,612	96,308	0	158,920	0.0179	0.2079
180	31,853	0	0	31,853	0.0036	0.2115
210	63,706	127,494	0	191,200	0.0215	0.2329
220	31,575	59,048	0	90,623	0.0102	0.2431
230	31,304	35,073	0	66,377	0.0075	0.2506
240	94,187	99,343	0	193,530	0.0218	0.2723
250	34,860	151,137	0	185,997	0.0209	0.2932
260	0	33,312	0	33,312	0.0037	0.2970
270	95,787	147,189	0	242,976	0.0273	0.3243
280	94,824	65,165	0	159,989	0.0180	0.3423
290	94,016	101,606	0	195,622	0.0220	0.3643
300	128,768	153,781	0	282,548	0.0318	0.3960
310	71,394	0	0	71,394	0.0080	0.4041
320	33,312	32,184	0	65,496	0.0074	0.4114
330	64,800	0	0	64,800	0.0073	0.4187
340	33,312	0	0	33,312	0.0037	0.4224
350	31,853	0	0	31,853	0.0036	0.4260
370	0	32,184	0	32,184	0.0036	0.4296
380	0	30,411	0	30,411	0.0034	0.4331
400	0	33,704	0	33,704	0.0038	0.4368
410	0	28,129	0	28,129	0.0032	0.4400
440	34,599	0	0	34,599	0.0039	0.4439
470	29,559	0	0	29,559	0.0033	0.4472
510	0	31,174	0	31,174	0.0035	0.4507
550	0	34,951	0	34,951	0.0039	0.4547
600	0	31,853	0	31,853	0.0036	0.4582
610	0	30,759	0	30,759	0.0035	0.4617
620	64,632	0	0	64,632	0.0073	0.4690
630	0	127,581	0	127,581	0.0143	0.4833
640	56,888	61,631	0	118,519	0.0133	0.4966
650	67,185	80,337	0	147,522	0.0166	0.5132
660	62,334	62,608	0	124,942	0.0140	0.5272
670	0	64,760	0	64,760	0.0073	0.5345
680	123,120	33,803	0	156,922	0.0176	0.5522
690	0	61,958	0	61,958	0.0070	0.5591
700	65,247	33,394	0	98,642	0.0111	0.5702
710	125,422	0	0	125,422	0.0141	0.5843
720	89,750	34,545	0	124,295	0.0140	0.5983

Appendix D Table 2b. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
730	285,671	155,925	0	441,596	0.0496	0.6479
740	159,810	97,100	0	256,910	0.0289	0.6768
750	0	130,317	0	130,317	0.0146	0.6914
760	189,465	125,320	0	314,785	0.0354	0.7268
770	128,836	162,311	0	291,147	0.0327	0.7595
780	96,143	128,646	0	224,789	0.0253	0.7848
790	91,135	65,617	0	156,751	0.0176	0.8024
800	123,035	163,447	0	286,482	0.0322	0.8346
810	99,593	66,579	0	166,172	0.0187	0.8533
820	150,373	157,575	0	307,947	0.0346	0.8879
830	130,294	96,229	0	226,523	0.0255	0.9134
840	34,740	61,103	0	95,843	0.0108	0.9241
850	91,240	159,577	0	250,816	0.0282	0.9523
860	0	98,581	0	98,581	0.0111	0.9634
870	0	30,784	0	30,784	0.0035	0.9669
880	0	66,031	0	66,031	0.0074	0.9743
890	0	65,656	0	65,656	0.0074	0.9817
910	0	68,348	0	68,348	0.0077	0.9894
920	63,969	30,759	0	94,728	0.0106	1.0000
Total	**3,361,199**	**3,909,032**	**1,626,855**	**8,897,086**	**1.0000**	**1.0000**

Appendix D Table 3a. -- Population estimates by sex and size for **yellowfin sole** (*Limanda aspera*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	768,441	0	0	768,441	0.0001	0.0001
60	2,499,806	151,279	0	2,651,084	0.0003	0.0003
70	8,416,252	3,828,648	0	12,244,899	0.0012	0.0016
80	16,836,351	9,159,978	194,482	26,190,811	0.0026	0.0042
90	30,457,632	26,072,547	194,482	56,724,661	0.0056	0.0098
100	30,680,527	19,399,979	0	50,080,507	0.0050	0.0148
110	57,573,344	30,123,768	0	87,697,112	0.0087	0.0235
120	66,646,801	69,718,980	0	136,365,780	0.0136	0.0371
130	75,526,297	77,653,434	194,482	153,374,213	0.0153	0.0523
140	110,380,088	100,020,815	0	210,400,904	0.0209	0.0733
150	133,739,863	148,178,567	0	281,918,430	0.0280	0.1013
160	123,385,932	118,485,960	0	241,871,891	0.0241	0.1253
170	121,324,780	147,872,475	0	269,197,255	0.0268	0.1521
180	164,333,816	175,869,345	48,848	340,252,009	0.0338	0.1860
190	184,143,491	191,709,184	146,545	375,999,219	0.0374	0.2234
200	205,269,463	204,571,855	195,393	410,036,710	0.0408	0.2641
210	234,237,957	209,945,260	488,482	444,671,698	0.0442	0.3084
220	257,361,398	262,749,801	439,634	520,550,832	0.0518	0.3601
230	234,939,358	217,467,670	1,563,142	453,970,171	0.0452	0.4053
240	241,933,973	256,507,532	683,875	499,125,380	0.0496	0.4549
250	209,083,479	207,715,454	732,723	417,531,656	0.0415	0.4965
260	185,953,908	212,235,944	293,089	398,482,940	0.0396	0.5361
270	207,817,210	194,758,604	293,089	402,868,903	0.0401	0.5762
280	213,231,592	212,365,509	97,696	425,694,798	0.0423	0.6185
290	300,162,054	244,563,520	0	544,725,573	0.0542	0.6727
300	297,452,195	252,426,848	48,848	549,927,891	0.0547	0.7274
310	362,418,840	299,156,153	48,848	661,623,841	0.0658	0.7932
320	270,481,055	306,941,294	146,545	577,568,894	0.0574	0.8506
330	208,155,111	278,899,900	97,696	487,152,707	0.0485	0.8991
340	103,092,266	234,143,554	0	337,235,820	0.0335	0.9326
350	64,256,856	206,211,831	48,848	270,517,536	0.0269	0.9595
360	25,717,355	159,668,784	48,848	185,434,988	0.0184	0.9780
370	6,047,513	93,743,965	48,848	99,840,326	0.0099	0.9879
380	6,797,051	54,898,789	0	61,695,840	0.0061	0.9940
390	267,910	40,513,802	97,696	40,879,409	0.0041	0.9981
400	233,956	11,045,956	0	11,279,912	0.0011	0.9992
410	246,788	5,232,034	0	5,478,822	0.0005	0.9998
420	0	1,869,121	0	1,869,121	0.0002	1.0000
430	0	290,455	0	290,455	0.0000	1.0000
440	0	17,090	0	17,090	0.0000	1.0000
460	0	34,980	0	34,980	0.0000	1.0000
Total	**4,761,870,708**	**5,286,220,666**	**6,152,139**	**10,054,243,513**	**1.0000**	**1.0000**

Appendix D Table 3b. -- Population estimates by sex and size for **yellowfin sole** (*Limanda aspera*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	0	0	235,643	235,643	0.0001	0.0001
60	0	471,286	4,545,515	5,016,800	0.0026	0.0027
70	0	0	3,385,805	3,385,805	0.0017	0.0044
80	875,938	1,004,034	1,178,214	3,058,186	0.0016	0.0060
90	395,435	3,220,721	1,727,358	5,343,514	0.0027	0.0088
100	2,289,637	2,719,747	506,568	5,515,952	0.0028	0.0116
110	7,948,228	7,463,614	0	15,411,842	0.0079	0.0195
120	15,663,751	18,144,358	0	33,808,109	0.0174	0.0369
130	35,867,057	34,826,173	0	70,693,230	0.0363	0.0733
140	35,378,623	32,501,692	0	67,880,315	0.0349	0.1082
150	41,374,221	50,271,508	0	91,645,730	0.0471	0.1553
160	54,019,170	50,428,531	0	104,447,701	0.0537	0.2090
170	66,087,322	59,518,857	0	125,606,178	0.0646	0.2736
180	67,481,806	58,201,165	0	125,682,971	0.0646	0.3382
190	88,040,081	79,679,560	0	167,719,641	0.0862	0.4244
200	52,353,173	44,277,988	0	96,631,161	0.0497	0.4741
210	51,197,177	54,081,905	0	105,279,082	0.0541	0.5282
220	26,015,653	22,476,959	0	48,492,612	0.0249	0.5532
230	31,844,294	34,857,417	0	66,701,711	0.0343	0.5875
240	17,654,827	12,392,662	0	30,047,488	0.0154	0.6029
250	24,914,305	29,306,973	0	54,221,277	0.0279	0.6308
260	18,381,150	10,929,942	0	29,311,092	0.0151	0.6459
270	28,515,038	28,212,366	0	56,727,404	0.0292	0.6750
280	22,530,212	15,343,712	0	37,873,924	0.0195	0.6945
290	25,764,733	28,443,462	0	54,208,195	0.0279	0.7224
300	25,255,834	18,994,222	0	44,250,056	0.0228	0.7451
310	45,719,709	39,187,616	0	84,907,325	0.0437	0.7888
320	30,778,175	25,769,483	0	56,547,658	0.0291	0.8179
330	32,116,917	53,059,808	0	85,176,725	0.0438	0.8617
340	19,331,482	29,401,211	0	48,732,693	0.0251	0.8867
350	21,681,931	41,051,715	0	62,733,646	0.0323	0.9190
360	16,185,188	18,769,043	0	34,954,231	0.0180	0.9370
370	10,803,260	27,085,254	0	37,888,514	0.0195	0.9564
380	5,836,367	18,760,943	0	24,597,310	0.0126	0.9691
390	4,338,064	20,280,587	0	24,618,651	0.0127	0.9817
400	862,604	8,949,547	0	9,812,151	0.0050	0.9868
410	1,333,793	9,284,609	0	10,618,402	0.0055	0.9922
420	431,346	3,585,165	0	4,016,511	0.0021	0.9943
430	113,684	6,420,796	0	6,534,480	0.0034	0.9977
440	187,353	1,926,437	0	2,113,790	0.0011	0.9988
450	56,842	1,602,968	0	1,659,810	0.0009	0.9996
460	0	339,843	0	339,843	0.0002	0.9998
470	0	285,829	0	285,829	0.0001	0.9999
480	0	70,228	0	70,228	0.0000	1.0000
500	0	63,443	0	63,443	0.0000	1.0000
Total	**929,624,382**	**1,003,663,377**	**11,579,103**	**1,944,866,862**	**1.0000**	**1.0000**

Appendix D Table 4a. -- Population estimates by sex and size for **southern** and **northern rock sole** (*Lepidopsetta* spp.) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
70	3,539,441	946,311	0	4,485,752	0.0005	0.0005
80	6,026,193	1,078,027	0	7,104,220	0.0008	0.0012
90	0	7,425,127	0	7,425,127	0.0008	0.0020
100	9,209,985	7,034,650	0	16,244,635	0.0017	0.0038
110	8,750,089	4,536,387	0	13,286,476	0.0014	0.0052
120	17,603,137	21,681,789	45,789	39,330,715	0.0042	0.0095
130	39,658,148	63,117,283	177,931	102,953,363	0.0111	0.0205
140	54,344,947	55,932,203	91,578	110,368,728	0.0119	0.0324
150	125,984,919	99,414,453	45,789	225,445,161	0.0243	0.0567
160	141,280,915	97,891,196	0	239,172,111	0.0257	0.0824
170	162,392,458	161,643,837	0	324,036,295	0.0349	0.1173
180	224,607,900	186,155,656	0	410,763,557	0.0442	0.1615
190	265,730,772	228,955,596	0	494,686,368	0.0532	0.2147
200	257,710,889	239,782,100	0	497,492,989	0.0535	0.2682
210	271,880,819	269,343,610	0	541,224,430	0.0582	0.3264
220	252,871,325	236,141,777	0	489,013,102	0.0526	0.3791
230	216,139,295	201,632,032	0	417,771,326	0.0450	0.4240
240	217,522,604	189,535,751	0	407,058,354	0.0438	0.4678
250	259,952,078	231,031,084	0	490,983,162	0.0528	0.5206
260	250,404,547	214,516,579	0	464,921,126	0.0500	0.5707
270	309,394,545	228,633,943	0	538,028,487	0.0579	0.6286
280	313,048,449	192,924,577	0	505,973,026	0.0544	0.6830
290	327,174,681	233,846,461	0	561,021,141	0.0604	0.7434
300	281,236,494	196,417,159	0	477,653,653	0.0514	0.7948
310	178,459,900	176,370,140	0	354,830,040	0.0382	0.8329
320	116,272,870	149,941,778	0	266,214,648	0.0286	0.8616
330	73,036,298	172,483,596	0	245,519,895	0.0264	0.8880
340	34,742,899	170,062,297	0	204,805,196	0.0220	0.9100
350	22,490,610	174,835,211	0	197,325,821	0.0212	0.9313
360	11,485,176	161,346,979	0	172,832,156	0.0186	0.9499
370	6,778,805	165,979,096	0	172,757,901	0.0186	0.9684
380	2,770,391	117,855,217	0	120,625,608	0.0130	0.9814
390	1,153,979	86,867,025	0	88,021,004	0.0095	0.9909
400	1,720,647	33,255,166	0	34,975,812	0.0038	0.9947
410	33,098	21,004,510	0	21,037,608	0.0023	0.9969
420	0	11,521,816	0	11,521,816	0.0012	0.9982
430	766,128	9,462,982	0	10,229,110	0.0011	0.9993
440	1,370,573	1,170,447	0	2,541,020	0.0003	0.9995
450	0	2,227,908	0	2,227,908	0.0002	0.9998
460	0	61,932	0	61,932	0.0000	0.9998
470	310,508	734,478	0	1,044,986	0.0001	0.9999
480	0	210,120	0	210,120	0.0000	0.9999
490	0	766,128	0	766,128	0.0001	1.0000
Total	**4,467,856,510**	**4,825,774,415**	**361,087**	**9,293,992,012**	**1.0000**	**1.0000**

Appendix D Table 4b. -- Population estimates by sex and size for **southern** and **northern rock sole** (*Lepidopsetta* spp.) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
110	34,378	0	0	34,378	0.0008	0.0008
120	0	34,378	0	34,378	0.0008	0.0017
130	34,378	0	0	34,378	0.0008	0.0025
140	62,984	0	0	62,984	0.0015	0.0040
160	0	33,416	0	33,416	0.0008	0.0048
170	34,860	34,860	0	69,720	0.0017	0.0065
180	64,574	87,219	0	151,793	0.0037	0.0102
190	0	66,713	0	66,713	0.0016	0.0118
200	0	58,528	0	58,528	0.0014	0.0133
210	33,562	58,074	0	91,636	0.0022	0.0155
220	33,877	0	0	33,877	0.0008	0.0163
230	67,043	33,877	0	100,921	0.0025	0.0188
240	68,737	32,184	0	100,921	0.0025	0.0212
250	67,043	129,567	0	196,611	0.0048	0.0260
260	414,288	125,572	0	539,860	0.0131	0.0391
270	164,296	251,478	0	415,774	0.0101	0.0492
280	1,034,096	153,200	0	1,187,295	0.0288	0.0780
290	1,703,310	501,642	0	2,204,951	0.0536	0.1316
300	2,508,459	534,478	0	3,042,938	0.0739	0.2055
310	3,420,927	1,191,095	0	4,612,023	0.1120	0.3175
320	2,209,370	1,076,427	0	3,285,796	0.0798	0.3973
330	1,665,436	1,932,291	0	3,597,727	0.0874	0.4847
340	998,199	1,341,158	0	2,339,357	0.0568	0.5415
350	557,922	2,324,294	0	2,882,216	0.0700	0.6115
360	378,671	2,400,692	0	2,779,362	0.0675	0.6790
370	166,158	2,724,932	0	2,891,090	0.0702	0.7492
380	223,985	2,220,642	0	2,444,626	0.0594	0.8086
390	195,943	2,570,543	0	2,766,487	0.0672	0.8758
400	192,279	1,612,108	0	1,804,386	0.0438	0.9196
410	0	1,209,432	0	1,209,432	0.0294	0.9490
420	0	606,012	0	606,012	0.0147	0.9637
430	0	444,001	0	444,001	0.0108	0.9745
440	0	344,766	0	344,766	0.0084	0.9829
450	0	201,338	0	201,338	0.0049	0.9877
460	0	231,509	0	231,509	0.0056	0.9934
470	0	136,530	0	136,530	0.0033	0.9967
480	0	136,633	0	136,633	0.0033	1.0000
Total	**16,334,775**	**24,839,586**	**0**	**41,174,361**	**1.0000**	**1.0000**

Appendix D Table 5. -- Population estimates by sex and size for **flathead sole** (*Hippoglossoides elassodon*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	0	0	266,302	266,302	0.0002	0.0002
70	190,858	0	617,107	807,966	0.0005	0.0007
80	0	189,020	806,035	995,055	0.0006	0.0013
90	94,653	86,862	447,333	628,848	0.0004	0.0017
100	499,790	367,580	640,311	1,507,680	0.0010	0.0027
110	2,041,776	1,887,570	683,242	4,612,588	0.0030	0.0057
120	5,737,035	6,509,226	988,694	13,234,954	0.0085	0.0141
130	10,224,294	9,952,306	1,976,162	22,152,762	0.0142	0.0284
140	7,087,590	10,231,691	1,941,373	19,260,654	0.0124	0.0407
150	9,561,091	8,713,437	1,621,107	19,895,635	0.0128	0.0535
160	8,912,519	8,792,026	1,464,781	19,169,325	0.0123	0.0658
170	18,309,224	15,507,486	1,890,335	35,707,045	0.0229	0.0887
180	15,500,626	13,379,037	2,312,215	31,191,877	0.0200	0.1087
190	22,849,627	12,341,075	238,362	35,429,063	0.0227	0.1314
200	9,545,606	11,169,239	0	20,714,846	0.0133	0.1447
210	15,668,847	12,627,207	19,677	28,315,730	0.0182	0.1629
220	12,174,753	12,285,566	0	24,460,319	0.0157	0.1786
230	17,172,147	13,789,106	0	30,961,254	0.0199	0.1984
240	19,689,712	13,164,547	0	32,854,259	0.0211	0.2195
250	24,569,339	18,857,342	0	43,426,680	0.0279	0.2474
260	23,917,519	14,149,355	0	38,066,875	0.0244	0.2718
270	31,739,707	20,266,265	0	52,005,972	0.0334	0.3052
280	44,260,198	28,185,259	0	72,445,457	0.0465	0.3516
290	55,239,362	34,607,372	0	89,846,734	0.0576	0.4093
300	68,664,873	36,629,895	0	105,294,768	0.0676	0.4768
310	63,061,069	51,458,112	15,364	114,534,544	0.0735	0.5503
320	65,735,292	38,162,038	0	103,897,330	0.0667	0.6170
330	53,113,008	41,290,474	0	94,403,482	0.0606	0.6775
340	64,780,388	34,922,830	0	99,703,218	0.0640	0.7415
350	44,693,909	34,439,898	0	79,133,807	0.0508	0.7923
360	45,813,394	33,660,326	0	79,473,720	0.0510	0.8432
370	27,940,157	28,626,887	0	56,567,045	0.0363	0.8795
380	27,232,104	25,155,908	0	52,388,012	0.0336	0.9131
390	16,074,637	20,309,915	0	36,384,553	0.0233	0.9365
400	9,792,304	16,099,323	0	25,891,627	0.0166	0.9531
410	5,197,677	13,185,832	0	18,383,509	0.0118	0.9649
420	2,654,253	15,184,399	0	17,838,652	0.0114	0.9763
430	251,588	9,500,361	0	9,751,949	0.0063	0.9826
440	0	6,346,716	0	6,346,716	0.0041	0.9867
450	0	6,758,521	0	6,758,521	0.0043	0.9910
460	29,390	5,374,466	0	5,403,857	0.0035	0.9945
470	0	3,770,078	0	3,770,078	0.0024	0.9969
480	0	1,351,175	0	1,351,175	0.0009	0.9977
490	0	1,065,878	0	1,065,878	0.0007	0.9984
500	257,608	1,396,728	0	1,654,336	0.0011	0.9995
510	0	409,141	87,253	496,394	0.0003	0.9998
520	0	143,326	0	143,326	0.0001	0.9999
530	80,688	74,685	0	155,373	0.0001	1.0000
Total	**850,358,612**	**692,375,485**	**16,015,652**	**1,558,749,749**	**1.0000**	**1.0000**

Appendix D Table 6a. -- Population estimates by sex and size for **Bering flounder** (*Hippoglossoides robustus*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
70	0	0	917,921	917,921	0.0052	0.0052
80	89,724	0	2,691,079	2,780,804	0.0159	0.0211
90	87,777	59,056	15,610,328	15,757,161	0.0900	0.1111
100	319,494	700,762	18,826,252	19,846,508	0.1133	0.2244
110	2,188,830	1,843,365	20,168,983	24,201,178	0.1382	0.3626
120	3,512,477	3,317,078	15,568,909	22,398,464	0.1279	0.4905
130	4,485,159	4,670,589	10,344,133	19,499,881	0.1113	0.6019
140	3,155,002	3,545,083	5,885,918	12,586,003	0.0719	0.6737
150	1,642,946	3,116,913	1,831,531	6,591,391	0.0376	0.7114
160	863,834	2,283,150	619,999	3,766,983	0.0215	0.7329
170	1,587,925	907,488	390,893	2,886,307	0.0165	0.7494
180	1,415,291	867,472	0	2,282,763	0.0130	0.7624
190	1,428,916	552,588	116,656	2,098,159	0.0120	0.7744
200	651,424	1,050,427	0	1,701,851	0.0097	0.7841
210	484,577	1,817,121	0	2,301,698	0.0131	0.7973
220	245,216	2,174,839	0	2,420,055	0.0138	0.8111
230	527,947	4,112,398	0	4,640,345	0.0265	0.8376
240	343,193	3,905,432	81,821	4,330,446	0.0247	0.8623
250	200,945	3,372,598	0	3,573,543	0.0204	0.8827
260	195,426	2,906,988	0	3,102,413	0.0177	0.9004
270	62,951	2,537,193	0	2,600,145	0.0148	0.9153
280	165,936	1,620,204	81,821	1,867,960	0.0107	0.9259
290	73,796	1,314,375	0	1,388,171	0.0079	0.9339
300	61,128	1,350,387	0	1,411,515	0.0081	0.9419
310	172,728	1,259,810	81,821	1,514,358	0.0086	0.9506
320	138,196	851,273	0	989,469	0.0057	0.9562
330	50,278	1,512,171	0	1,562,449	0.0089	0.9651
340	182,845	1,309,691	0	1,492,535	0.0085	0.9737
350	47,698	1,119,483	81,821	1,249,001	0.0071	0.9808
360	30,715	446,857	0	477,572	0.0027	0.9835
370	0	713,125	0	713,125	0.0041	0.9876
380	0	741,763	0	741,763	0.0042	0.9918
390	30,715	567,424	0	598,138	0.0034	0.9952
400	54,062	374,948	0	429,010	0.0024	0.9977
410	0	249,560	0	249,560	0.0014	0.9991
440	0	59,379	0	59,379	0.0003	0.9995
510	0	95,162	0	95,162	0.0005	1.0000
Total	**24,497,150**	**57,326,153**	**93,299,885**	**175,123,188**	**1.0000**	**1.0000**

Appendix D Table 6b. -- Population estimates by sex and size for **Bering flounder** (*Hippoglossoides robustus*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	0	0	96,356	96,356	0.0005	0.0005
60	0	0	241,080	241,080	0.0013	0.0018
70	161,866	0	797,803	959,669	0.0051	0.0069
80	248,022	0	3,588,743	3,836,765	0.0203	0.0271
90	1,073,665	263,197	14,461,639	15,798,501	0.0835	0.1106
100	1,836,297	1,144,402	17,491,802	20,472,501	0.1082	0.2188
110	4,279,852	2,825,164	17,411,223	24,516,239	0.1295	0.3483
120	5,050,486	4,433,918	9,555,659	19,040,062	0.1006	0.4489
130	4,662,381	3,948,940	8,436,724	17,048,044	0.0901	0.5390
140	2,073,209	4,321,449	2,781,370	9,176,029	0.0485	0.5875
150	2,243,096	4,491,081	694,973	7,429,151	0.0393	0.6267
160	3,420,390	2,515,736	238,893	6,175,019	0.0326	0.6593
170	7,325,245	2,034,275	78,102	9,437,623	0.0499	0.7092
180	5,046,252	1,242,665	0	6,288,917	0.0332	0.7424
190	4,217,711	1,161,444	0	5,379,155	0.0284	0.7708
200	2,319,231	1,924,922	0	4,244,153	0.0224	0.7933
210	861,818	3,377,369	0	4,239,187	0.0224	0.8157
220	985,844	3,770,013	0	4,755,857	0.0251	0.8408
230	477,136	4,825,844	0	5,302,980	0.0280	0.8688
240	399,450	3,506,909	0	3,906,358	0.0206	0.8895
250	347,904	4,005,772	0	4,353,676	0.0230	0.9125
260	90,389	2,702,677	0	2,793,066	0.0148	0.9272
270	257,278	1,754,732	0	2,012,009	0.0106	0.9378
280	55,250	1,897,115	0	1,952,365	0.0103	0.9482
290	56,324	1,390,552	0	1,446,876	0.0076	0.9558
300	0	618,227	0	618,227	0.0033	0.9591
310	27,195	496,495	0	523,690	0.0028	0.9618
320	60,844	837,337	0	898,181	0.0047	0.9666
330	0	877,704	0	877,704	0.0046	0.9712
340	0	434,291	0	434,291	0.0023	0.9735
350	0	1,136,560	0	1,136,560	0.0060	0.9795
360	0	876,072	0	876,072	0.0046	0.9841
370	0	1,358,997	0	1,358,997	0.0072	0.9913
380	0	418,058	0	418,058	0.0022	0.9935
390	0	604,038	0	604,038	0.0032	0.9967
400	0	85,841	0	85,841	0.0005	0.9972
410	0	278,974	0	278,974	0.0015	0.9987
420	0	183,323	0	183,323	0.0010	0.9996
430	0	42,322	0	42,322	0.0002	0.9998
440	0	29,128	0	29,128	0.0002	1.0000
Total	**47,577,134**	**65,815,545**	**75,874,367**	**189,267,046**	**1.0000**	**1.0000**

Appendix D Table 7a. -- Population estimates by sex and size for **Alaska plaice** (*Pleuronectes quadrituberculatus*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
80	29,161	0	0	29,161	0.0000	0.0000
110	204,657	29,678	0	234,335	0.0002	0.0003
120	111,237	0	0	111,237	0.0001	0.0004
130	232,250	31,303	0	263,552	0.0003	0.0007
140	404,535	89,052	0	493,587	0.0005	0.0012
150	311,292	541,456	0	852,748	0.0009	0.0021
160	715,830	515,543	0	1,231,373	0.0013	0.0034
170	1,433,753	1,045,409	0	2,479,162	0.0026	0.0060
180	2,199,375	1,144,264	0	3,343,638	0.0035	0.0095
190	1,253,888	1,603,158	0	2,857,046	0.0030	0.0125
200	2,889,782	2,448,068	0	5,337,850	0.0056	0.0182
210	3,901,773	3,681,048	0	7,582,821	0.0080	0.0262
220	6,095,278	4,586,362	0	10,681,639	0.0113	0.0374
230	6,978,920	6,154,255	0	13,133,175	0.0139	0.0513
240	10,199,612	8,207,585	0	18,407,197	0.0194	0.0707
250	17,735,611	10,839,417	0	28,575,028	0.0301	0.1009
260	20,734,824	14,940,945	0	35,675,769	0.0376	0.1385
270	30,830,465	22,845,693	0	53,676,158	0.0566	0.1951
280	29,205,246	25,611,443	0	54,816,689	0.0578	0.2530
290	32,337,489	23,433,597	0	55,771,086	0.0588	0.3118
300	33,648,872	24,192,268	0	57,841,140	0.0610	0.3728
310	33,214,936	20,538,487	0	53,753,423	0.0567	0.4295
320	33,101,960	18,451,178	0	51,553,137	0.0544	0.4839
330	39,932,907	15,584,057	0	55,516,964	0.0586	0.5425
340	46,298,582	14,973,647	0	61,272,229	0.0646	0.6071
350	51,355,533	11,437,540	0	62,793,074	0.0662	0.6734
360	42,621,200	11,388,422	0	54,009,621	0.0570	0.7303
370	36,581,654	9,658,184	0	46,239,838	0.0488	0.7791
380	20,386,756	14,008,281	0	34,395,036	0.0363	0.8154
390	12,986,333	11,260,758	0	24,247,091	0.0256	0.8410
400	5,583,939	12,828,133	0	18,412,072	0.0194	0.8604
410	2,758,534	13,520,070	0	16,278,604	0.0172	0.8776
420	509,915	11,847,860	0	12,357,774	0.0130	0.8906
430	521,062	17,409,873	0	17,930,934	0.0189	0.9095
440	67,039	18,018,016	0	18,085,055	0.0191	0.9286
450	58,388	15,659,074	0	15,717,462	0.0166	0.9452
460	26,600	13,881,361	0	13,907,961	0.0147	0.9599
470	127,192	11,748,372	0	11,875,564	0.0125	0.9724
480	0	6,097,273	0	6,097,273	0.0064	0.9788
490	80,327	5,558,017	0	5,638,344	0.0059	0.9848
500	0	4,745,559	0	4,745,559	0.0050	0.9898
510	0	3,436,720	0	3,436,720	0.0036	0.9934
520	0	1,841,906	0	1,841,906	0.0019	0.9954
530	0	1,242,568	0	1,242,568	0.0013	0.9967
540	0	1,221,018	0	1,221,018	0.0013	0.9980
550	0	1,092,032	0	1,092,032	0.0012	0.9991

Appendix D Table 7a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
560	0	47,542	0	47,542	0.0001	0.9992
570	0	359,557	0	359,557	0.0004	0.9995
580	102,519	134,482	0	237,000	0.0003	0.9998
590	0	55,400	0	55,400	0.0001	0.9998
630	102,519	0	0	102,519	0.0001	1.0000
720	0	42,010	0	42,010	0.0000	1.0000
Total	**527,871,744**	**420,027,940**	**0**	**947,899,683**	**1.0000**	**1.0000**

Appendix D Table 7b. -- Population estimates by sex and size for **Alaska plaice** (*Pleuronectes quadrituberculatus*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
60	100,530	0	0	100,530	0.0002	0.0002
100	0	42,422	0	42,422	0.0001	0.0002
110	218,081	548,802	0	766,883	0.0013	0.0015
120	772,002	287,803	0	1,059,805	0.0018	0.0033
130	1,313,761	1,048,700	0	2,362,460	0.0040	0.0073
140	1,994,525	2,024,958	0	4,019,483	0.0068	0.0141
150	4,922,160	3,137,253	0	8,059,413	0.0136	0.0277
160	6,350,292	4,500,605	0	10,850,897	0.0183	0.0460
170	7,565,616	6,300,652	0	13,866,268	0.0234	0.0694
180	5,735,917	6,475,186	0	12,211,102	0.0206	0.0900
190	5,288,134	6,614,288	0	11,902,422	0.0201	0.1101
200	5,486,275	5,972,797	0	11,459,072	0.0193	0.1295
210	7,635,796	7,774,730	0	15,410,525	0.0260	0.1555
220	4,382,062	5,175,253	0	9,557,315	0.0161	0.1716
230	8,347,740	9,116,123	0	17,463,863	0.0295	0.2011
240	7,612,108	5,095,585	0	12,707,692	0.0215	0.2225
250	12,168,427	10,875,089	0	23,043,516	0.0389	0.2614
260	7,336,334	7,028,596	0	14,364,930	0.0242	0.2857
270	14,098,178	11,122,235	0	25,220,413	0.0426	0.3283
280	8,246,772	6,972,385	0	15,219,157	0.0257	0.3540
290	11,841,322	11,819,436	0	23,660,757	0.0399	0.3939
300	9,015,909	6,942,507	0	15,958,416	0.0269	0.4208
310	12,931,504	9,806,156	0	22,737,659	0.0384	0.4592
320	14,641,891	6,463,616	0	21,105,508	0.0356	0.4948
330	21,385,089	12,230,393	0	33,615,482	0.0567	0.5516
340	24,962,842	8,288,615	0	33,251,457	0.0561	0.6077
350	28,481,267	13,612,350	0	42,093,617	0.0711	0.6788
360	19,894,129	11,473,784	0	31,367,914	0.0529	0.7317
370	19,019,975	10,284,479	0	29,304,455	0.0495	0.7812
380	12,084,481	7,398,644	0	19,483,125	0.0329	0.8141
390	6,772,585	7,473,796	0	14,246,381	0.0240	0.8381
400	2,988,373	10,868,059	0	13,856,432	0.0234	0.8615
410	1,907,115	11,240,737	0	13,147,852	0.0222	0.8837
420	1,872,604	11,131,652	0	13,004,256	0.0220	0.9057
430	1,165,531	8,592,071	0	9,757,601	0.0165	0.9221
440	759,168	7,736,386	0	8,495,554	0.0143	0.9365
450	656,497	8,156,572	0	8,813,069	0.0149	0.9513
460	323,571	6,634,237	0	6,957,808	0.0117	0.9631
470	515,606	5,849,543	0	6,365,150	0.0107	0.9738
480	0	3,840,023	0	3,840,023	0.0065	0.9803
490	180,300	3,919,181	0	4,099,481	0.0069	0.9872
500	28,129	1,529,089	0	1,557,218	0.0026	0.9899
510	80,893	2,183,762	0	2,264,655	0.0038	0.9937
520	0	958,760	0	958,760	0.0016	0.9953
530	0	801,999	0	801,999	0.0014	0.9967
540	0	728,762	0	728,762	0.0012	0.9979

Appendix D Table 7b. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
550	0	451,909	0	451,909	0.0008	0.9986
560	111,115	340,425	0	451,540	0.0008	0.9994
570	0	145,281	0	145,281	0.0002	0.9997
580	0	32,152	0	32,152	0.0001	0.9997
590	0	74,952	0	74,952	0.0001	0.9998
600	0	65,978	0	65,978	0.0001	0.9999
640	0	32,152	0	32,152	0.0001	1.0000
Total	**301,194,604**	**291,220,921**	**0**	**592,415,525**	**1.0000**	**1.0000**

Appendix D Table 8a. -- Population estimates by sex and size for **Greenland turbot** (*Reinhardtius hippoglossoides*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
80	0	0	85,324	85,324	0.0006	0.0006
90	59,194	32,724	84,155	176,073	0.0013	0.0019
100	240,917	88,766	409,604	739,286	0.0054	0.0073
110	324,987	367,876	1,466,341	2,159,204	0.0157	0.0230
120	1,694,653	625,919	4,275,346	6,595,919	0.0479	0.0709
130	2,904,185	1,400,366	11,031,863	15,336,414	0.1115	0.1824
140	4,367,878	1,989,557	16,195,485	22,552,920	0.1639	0.3463
150	2,665,564	1,264,677	16,485,608	20,415,849	0.1484	0.4946
160	1,441,189	1,111,300	5,301,141	7,853,629	0.0571	0.5517
170	782,511	464,258	3,354,440	4,601,209	0.0334	0.5852
180	699,703	472,595	920,865	2,093,162	0.0152	0.6004
190	1,764,052	879,654	686,644	3,330,349	0.0242	0.6246
200	1,935,999	1,054,199	342,524	3,332,721	0.0242	0.6488
210	2,481,935	1,155,357	354,622	3,991,914	0.0290	0.6778
220	3,615,493	2,006,708	241,935	5,864,136	0.0426	0.7204
230	4,558,340	3,014,426	144,832	7,717,598	0.0561	0.7765
240	3,623,717	1,625,363	38,587	5,287,668	0.0384	0.8149
250	1,587,511	1,177,154	0	2,764,664	0.0201	0.8350
260	1,183,461	907,435	0	2,090,896	0.0152	0.8502
270	676,189	344,763	0	1,020,952	0.0074	0.8576
280	753,020	431,925	0	1,184,945	0.0086	0.8663
290	314,445	237,747	0	552,192	0.0040	0.8703
300	874,330	727,912	0	1,602,242	0.0116	0.8819
310	820,078	633,527	0	1,453,605	0.0106	0.8925
320	861,785	383,308	0	1,245,092	0.0090	0.9015
330	1,113,364	606,078	0	1,719,442	0.0125	0.9140
340	916,057	498,187	0	1,414,244	0.0103	0.9243
350	549,530	0	0	549,530	0.0040	0.9283
360	685,124	600,444	0	1,285,567	0.0093	0.9376
370	423,727	263,142	0	686,870	0.0050	0.9426
380	340,605	138,331	0	478,936	0.0035	0.9461
390	728,585	215,397	0	943,982	0.0069	0.9530
400	468,974	283,820	0	752,794	0.0055	0.9584
410	448,081	170,383	0	618,464	0.0045	0.9629
420	489,694	59,763	0	549,457	0.0040	0.9669
430	689,538	0	0	689,538	0.0050	0.9719
440	325,138	0	0	325,138	0.0024	0.9743
450	186,812	0	0	186,812	0.0014	0.9757
460	128,692	104,573	0	233,265	0.0017	0.9774
480	49,249	0	0	49,249	0.0004	0.9777
540	31,602	0	0	31,602	0.0002	0.9779

Appendix D Table 8a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
550	30,002	0	0	30,002	0.0002	0.9782
560	30,002	0	0	30,002	0.0002	0.9784
580	0	72,601	0	72,601	0.0005	0.9789
590	29,006	0	0	29,006	0.0002	0.9791
600	73,450	52,232	0	125,682	0.0009	0.9800
610	85,984	146,901	0	232,885	0.0017	0.9817
620	0	29,577	0	29,577	0.0002	0.9819
630	98,505	159,658	0	258,163	0.0019	0.9838
640	29,621	138,216	0	167,837	0.0012	0.9850
650	0	61,152	0	61,152	0.0004	0.9855
660	0	58,583	0	58,583	0.0004	0.9859
670	0	233,167	0	233,167	0.0017	0.9876
690	0	106,911	0	106,911	0.0008	0.9884
700	98,505	29,006	0	127,511	0.0009	0.9893
710	0	58,627	0	58,627	0.0004	0.9897
720	0	59,008	0	59,008	0.0004	0.9902
730	0	59,242	0	59,242	0.0004	0.9906
740	116,621	29,006	0	145,627	0.0011	0.9916
750	0	91,595	0	91,595	0.0007	0.9923
760	0	91,154	0	91,154	0.0007	0.9930
770	88,306	29,577	0	117,883	0.0009	0.9938
790	0	29,577	0	29,577	0.0002	0.9940
800	121,239	61,152	0	182,392	0.0013	0.9954
820	0	143,386	0	143,386	0.0010	0.9964
900	0	141,497	0	141,497	0.0010	0.9974
930	0	29,540	0	29,540	0.0002	0.9977
960	0	169,332	0	169,332	0.0012	0.9989
990	0	99,328	0	99,328	0.0007	0.9996
1010	0	28,696	0	28,696	0.0002	0.9998
1020	0	25,425	0	25,425	0.0002	1.0000
Total	**48,607,147**	**27,571,779**	**61,419,314**	**137,598,240**	**1.0000**	**1.0000**

Appendix D Table 8b. -- Population estimates by sex and size for **Greenland turbot** (*Reinhardtius hippoglossoides*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
90	0	25,216	60,858	86,075	0.0257	0.0257
100	0	0	239,397	239,397	0.0714	0.0971
110	0	0	495,261	495,261	0.1478	0.2449
120	0	50,433	386,480	436,913	0.1304	0.3753
130	0	0	416,881	416,881	0.1244	0.4997
140	30,411	75,649	313,756	419,816	0.1253	0.6250
150	0	30,411	331,325	361,736	0.1079	0.7329
160	30,411	28,490	55,884	114,786	0.0343	0.7671
170	0	28,490	27,394	55,884	0.0167	0.7838
200	28,490	57,189	0	85,679	0.0256	0.8094
210	29,282	0	0	29,282	0.0087	0.8181
220	114,397	87,184	0	201,581	0.0602	0.8783
240	82,197	105,675	0	187,872	0.0561	0.9343
250	28,698	28,490	0	57,189	0.0171	0.9514
280	28,490	28,698	0	57,189	0.0171	0.9685
290	76,977	0	0	76,977	0.0230	0.9914
300	28,698	0	0	28,698	0.0086	1.0000
Total	**478,052**	**545,926**	**2,327,237**	**3,351,215**	**1.0000**	**1.0000**

Appendix D Table 9. -- Population estimates by sex and size for **arrowtooth flounder** (*Atheresthes stomias*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
70	0	0	56,257	56,257	0.0001	0.0001
80	119,482	0	0	119,482	0.0001	0.0002
90	280,211	203,464	0	483,675	0.0005	0.0006
100	224,706	391,807	934,714	1,551,226	0.0015	0.0021
110	1,285,745	372,577	371,044	2,029,366	0.0019	0.0040
120	797,794	328,703	168,772	1,295,269	0.0012	0.0052
130	495,192	901,486	0	1,396,678	0.0013	0.0065
140	2,632,731	2,624,249	257,242	5,514,223	0.0052	0.0117
150	4,401,792	8,011,877	116,355	12,530,024	0.0118	0.0236
160	10,349,812	17,237,224	352,255	27,939,290	0.0263	0.0499
170	10,617,935	21,566,412	391,127	32,575,473	0.0307	0.0806
180	7,127,953	18,330,066	78,225	25,536,244	0.0241	0.1047
190	4,750,637	10,129,026	78,225	14,957,888	0.0141	0.1188
200	3,532,029	5,695,179	0	9,227,208	0.0087	0.1275
210	3,099,062	4,872,089	0	7,971,151	0.0075	0.1350
220	6,049,575	8,521,874	0	14,571,449	0.0137	0.1488
230	7,571,217	13,008,153	0	20,579,370	0.0194	0.1682
240	7,441,856	14,186,400	0	21,628,257	0.0204	0.1886
250	7,896,669	15,584,885	0	23,481,553	0.0221	0.2107
260	4,483,323	12,240,980	0	16,724,303	0.0158	0.2265
270	4,988,734	12,900,878	0	17,889,612	0.0169	0.2434
280	6,101,873	15,965,614	0	22,067,487	0.0208	0.2642
290	11,203,927	20,226,034	0	31,429,961	0.0296	0.2938
300	10,246,956	27,157,052	0	37,404,008	0.0353	0.3291
310	12,484,880	29,980,140	0	42,465,021	0.0400	0.3691
320	10,775,022	31,439,146	0	42,214,169	0.0398	0.4089
330	11,800,451	28,325,495	0	40,125,946	0.0378	0.4468
340	13,453,838	34,020,323	0	47,474,161	0.0448	0.4916
350	13,897,682	30,271,126	0	44,168,808	0.0417	0.5332
360	8,056,420	30,099,605	0	38,156,025	0.0360	0.5692
370	8,781,238	31,420,983	0	40,202,221	0.0379	0.6071
380	12,155,401	23,532,108	0	35,687,509	0.0337	0.6408
390	9,387,596	23,455,611	0	32,843,208	0.0310	0.6717
400	11,659,537	18,931,268	0	30,590,805	0.0288	0.7006
410	9,205,287	19,677,683	0	28,882,969	0.0272	0.7278
420	9,938,924	23,442,672	0	33,381,596	0.0315	0.7593
430	7,252,699	23,179,242	0	30,431,941	0.0287	0.7880
440	7,081,900	20,653,918	0	27,735,818	0.0262	0.8142
450	3,815,990	20,745,831	0	24,561,821	0.0232	0.8373
460	2,631,082	23,254,973	0	25,886,054	0.0244	0.8617
470	2,097,962	18,156,421	0	20,254,384	0.0191	0.8808
480	1,451,404	20,941,679	0	22,393,083	0.0211	0.9019
490	531,603	15,142,159	0	15,673,762	0.0148	0.9167
500	150,412	14,712,291	0	14,862,703	0.0140	0.9307
510	388,976	12,304,914	0	12,693,890	0.0120	0.9427
520	216,191	12,519,490	0	12,735,681	0.0120	0.9547

Appendix D Table 9. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
530	173,943	7,296,642	0	7,470,585	0.0070	0.9618
540	231,194	9,016,640	0	9,247,834	0.0087	0.9705
550	231,194	5,117,688	0	5,348,882	0.0050	0.9755
560	65,395	5,113,821	0	5,179,216	0.0049	0.9804
570	0	2,911,943	0	2,911,943	0.0027	0.9832
580	187,071	3,386,106	0	3,573,177	0.0034	0.9865
590	0	1,579,116	0	1,579,116	0.0015	0.9880
600	29,621	2,499,918	0	2,529,539	0.0024	0.9904
610	0	1,348,615	0	1,348,615	0.0013	0.9917
620	0	796,284	0	796,284	0.0008	0.9924
630	0	478,995	0	478,995	0.0005	0.9929
640	0	264,203	0	264,203	0.0002	0.9931
650	0	1,032,416	0	1,032,416	0.0010	0.9941
660	0	1,242,933	0	1,242,933	0.0012	0.9953
670	0	457,029	0	457,029	0.0004	0.9957
680	0	499,869	0	499,869	0.0005	0.9962
690	0	557,300	0	557,300	0.0005	0.9967
700	0	425,508	0	425,508	0.0004	0.9971
710	0	291,254	0	291,254	0.0003	0.9974
720	0	537,080	0	537,080	0.0005	0.9979
730	0	825,349	0	825,349	0.0008	0.9987
740	0	255,948	0	255,948	0.0002	0.9989
750	0	437,108	0	437,108	0.0004	0.9993
770	0	182,740	0	182,740	0.0002	0.9995
780	0	277,591	0	277,591	0.0003	0.9998
790	0	102,285	0	102,285	0.0001	0.9999
840	0	69,895	0	69,895	0.0001	0.9999
900	0	82,622	0	82,622	0.0001	1.0000
Total	**273,832,126**	**783,750,005**	**2,804,217**	**1,060,386,349**	**1.0000**	**1.0000**

Appendix D Table 10. -- Population estimates by sex and size for **Kamchatka flounder** (*Atheresthes evermanni*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
70	0	28,471	0	28,471	0.0002	0.0002
90	28,927	27,759	0	56,686	0.0004	0.0006
100	468,041	141,072	54,961	664,074	0.0050	0.0057
110	489,841	487,584	28,771	1,006,196	0.0076	0.0133
120	430,003	316,923	0	746,926	0.0057	0.0189
130	738,747	185,329	44,440	968,516	0.0073	0.0263
140	733,748	393,202	0	1,126,950	0.0085	0.0348
150	1,668,134	1,018,050	88,880	2,775,064	0.0210	0.0558
160	4,969,078	3,639,811	44,440	8,653,329	0.0655	0.1212
170	4,828,928	3,874,240	0	8,703,169	0.0658	0.1871
180	4,354,360	3,339,965	0	7,694,324	0.0582	0.2453
190	2,098,000	1,153,869	0	3,251,869	0.0246	0.2699
200	1,877,330	1,279,485	0	3,156,816	0.0239	0.2937
210	3,206,549	1,557,239	0	4,763,788	0.0360	0.3298
220	3,932,392	2,453,354	0	6,385,746	0.0483	0.3781
230	2,392,933	2,387,418	0	4,780,351	0.0362	0.4143
240	1,736,141	1,294,047	0	3,030,188	0.0229	0.4372
250	793,705	1,168,326	0	1,962,031	0.0148	0.4520
260	722,859	876,722	0	1,599,581	0.0121	0.4641
270	568,544	866,234	0	1,434,777	0.0109	0.4750
280	1,439,710	1,063,632	0	2,503,342	0.0189	0.4939
290	1,010,858	1,016,014	0	2,026,872	0.0153	0.5092
300	1,200,555	941,397	0	2,141,952	0.0162	0.5254
310	1,995,541	1,298,082	0	3,293,623	0.0249	0.5504
320	1,068,114	1,261,452	0	2,329,565	0.0176	0.5680
330	1,718,467	1,220,667	0	2,939,134	0.0222	0.5902
340	1,557,812	2,271,236	0	3,829,049	0.0290	0.6192
350	1,182,882	1,944,598	0	3,127,480	0.0237	0.6428
360	1,110,488	828,187	0	1,938,675	0.0147	0.6575
370	641,108	971,699	0	1,612,806	0.0122	0.6697
380	823,579	362,953	0	1,186,532	0.0090	0.6787
390	498,237	1,513,138	0	2,011,375	0.0152	0.6939
400	1,062,842	913,414	0	1,976,256	0.0149	0.7088
410	1,597,041	900,659	0	2,497,700	0.0189	0.7277
420	2,493,416	1,775,439	0	4,268,855	0.0323	0.7600
430	2,713,884	1,373,345	0	4,087,229	0.0309	0.7909
440	2,839,483	1,527,053	0	4,366,536	0.0330	0.8240
450	2,082,017	1,891,629	0	3,973,646	0.0301	0.8540
460	2,468,759	2,244,310	0	4,713,070	0.0357	0.8897
470	717,140	1,869,207	0	2,586,348	0.0196	0.9092
480	1,361,583	2,115,197	0	3,476,779	0.0263	0.9355
490	343,955	1,698,585	0	2,042,540	0.0155	0.9510
500	328,701	1,604,815	0	1,933,516	0.0146	0.9656
510	120,275	508,097	0	628,372	0.0048	0.9704
520	211,770	556,654	0	768,424	0.0058	0.9762
530	20,333	551,375	0	571,708	0.0043	0.9805

Appendix D Table 10. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
540	0	192,396	0	192,396	0.0015	0.9820
550	77,630	124,910	0	202,539	0.0015	0.9835
560	68,931	29,465	0	98,397	0.0007	0.9842
570	102,984	63,996	0	166,980	0.0013	0.9855
580	98,634	60,367	0	159,000	0.0012	0.9867
590	0	61,066	0	61,066	0.0005	0.9872
600	0	165,212	0	165,212	0.0012	0.9884
610	0	29,931	0	29,931	0.0002	0.9887
620	0	29,210	0	29,210	0.0002	0.9889
630	0	57,872	0	57,872	0.0004	0.9893
640	0	123,875	0	123,875	0.0009	0.9902
650	0	40,623	0	40,623	0.0003	0.9906
660	0	186,889	0	186,889	0.0014	0.9920
680	0	31,602	0	31,602	0.0002	0.9922
690	0	101,393	0	101,393	0.0008	0.9930
710	0	97,890	0	97,890	0.0007	0.9937
720	0	141,522	0	141,522	0.0011	0.9948
730	0	126,822	0	126,822	0.0010	0.9957
740	0	294,367	0	294,367	0.0022	0.9980
760	0	18,563	0	18,563	0.0001	0.9981
770	0	81,237	0	81,237	0.0006	0.9987
840	0	168,256	0	168,256	0.0013	1.0000
Total	**68,994,986**	**62,939,395**	**261,493**	**132,195,874**	**1.0000**	**1.0000**

Appendix D Table 11a. -- Population estimates by sex and size for **Pacific halibut** (*Hippoglossus stenolepis*) from the 2010 eastern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
50	27,948	0	0	27,948	0.0003	0.0003
80	0	0	28,391	28,391	0.0003	0.0005
150	30,727	0	0	30,727	0.0003	0.0008
160	32,232	32,232	0	64,463	0.0006	0.0014
170	32,232	32,401	0	64,633	0.0006	0.0020
180	60,805	95,046	30,489	186,340	0.0017	0.0037
190	220,725	91,286	0	312,011	0.0029	0.0067
200	218,729	310,105	242,358	771,192	0.0072	0.0138
210	455,349	551,046	271,744	1,278,139	0.0119	0.0257
220	617,904	273,898	333,315	1,225,117	0.0114	0.0371
230	244,251	275,862	218,041	738,154	0.0069	0.0440
240	144,383	81,194	147,795	373,373	0.0035	0.0475
250	183,533	50,705	90,978	325,216	0.0030	0.0505
260	82,937	0	89,959	172,895	0.0016	0.0521
270	86,040	88,235	122,500	296,775	0.0028	0.0549
280	120,659	76,335	60,756	257,749	0.0024	0.0573
290	160,574	225,174	333,259	719,007	0.0067	0.0640
300	269,213	180,373	211,648	661,234	0.0062	0.0701
310	278,632	263,419	468,649	1,010,700	0.0094	0.0795
320	151,531	252,567	212,453	616,550	0.0057	0.0853
330	430,448	234,125	487,571	1,152,144	0.0107	0.0960
340	492,322	331,048	366,989	1,190,359	0.0111	0.1071
350	630,570	353,487	719,735	1,703,792	0.0159	0.1229
360	466,508	453,590	1,094,665	2,014,763	0.0188	0.1417
370	563,289	805,124	913,734	2,282,146	0.0212	0.1629
380	450,322	556,915	1,283,824	2,291,061	0.0213	0.1842
390	833,038	668,932	1,140,543	2,642,513	0.0246	0.2088
400	978,235	647,838	1,352,021	2,978,094	0.0277	0.2365
410	1,004,985	890,171	1,500,270	3,395,427	0.0316	0.2682
420	624,462	541,026	1,617,091	2,782,579	0.0259	0.2940
430	1,113,117	783,479	1,406,796	3,303,392	0.0307	0.3248
440	781,343	633,406	2,274,672	3,689,421	0.0343	0.3591
450	785,437	784,672	1,836,368	3,406,476	0.0317	0.3908
460	608,815	831,709	2,313,982	3,754,505	0.0349	0.4258
470	904,193	840,733	2,033,079	3,778,005	0.0352	0.4609
480	660,296	759,110	1,928,287	3,347,693	0.0312	0.4921
490	694,136	914,816	1,818,614	3,427,567	0.0319	0.5240
500	828,582	1,093,442	1,855,121	3,777,145	0.0352	0.5592
510	716,855	826,285	1,926,242	3,469,382	0.0323	0.5914
520	380,305	731,422	1,770,068	2,881,796	0.0268	0.6183
530	534,702	738,807	1,791,182	3,064,691	0.0285	0.6468
540	514,103	797,241	1,509,092	2,820,437	0.0263	0.6730
550	438,962	697,050	1,216,350	2,352,363	0.0219	0.6949
560	658,680	940,939	1,455,367	3,054,987	0.0284	0.7234
570	514,959	712,827	1,284,711	2,512,497	0.0234	0.7468
580	333,866	729,824	1,197,394	2,261,084	0.0210	0.7678

Appendix D Table 11a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
590	437,918	382,624	1,156,388	1,976,930	0.0184	0.7862
600	425,454	611,888	913,378	1,950,720	0.0182	0.8044
610	468,771	459,367	754,228	1,682,366	0.0157	0.8200
620	188,289	336,386	963,369	1,488,043	0.0138	0.8339
630	217,292	670,553	850,918	1,738,763	0.0162	0.8500
640	191,261	341,371	783,685	1,316,317	0.0123	0.8623
650	56,772	306,561	596,174	959,507	0.0089	0.8712
660	196,011	308,662	571,401	1,076,074	0.0100	0.8812
670	209,304	164,727	260,767	634,799	0.0059	0.8872
680	83,169	342,256	550,399	975,824	0.0091	0.8962
690	97,796	267,513	267,873	633,182	0.0059	0.9021
700	52,845	274,861	396,512	724,218	0.0067	0.9089
710	149,723	290,554	581,471	1,021,749	0.0095	0.9184
720	104,255	245,676	233,203	583,134	0.0054	0.9238
730	211,016	198,318	424,409	833,743	0.0078	0.9316
740	85,979	204,786	213,261	504,026	0.0047	0.9363
750	27,948	208,111	237,343	473,402	0.0044	0.9407
760	0	54,246	347,257	401,503	0.0037	0.9444
770	0	55,754	295,761	351,514	0.0033	0.9477
780	27,126	98,444	280,989	406,560	0.0038	0.9515
790	89,454	146,538	345,891	581,883	0.0054	0.9569
800	26,655	170,076	332,177	528,908	0.0049	0.9618
810	135,381	82,037	183,097	400,515	0.0037	0.9655
820	0	139,777	202,192	341,969	0.0032	0.9687
830	77,226	26,232	248,922	352,380	0.0033	0.9720
840	0	82,255	108,292	190,547	0.0018	0.9738
850	25,157	26,655	195,994	247,806	0.0023	0.9761
860	31,756	26,457	123,561	181,773	0.0017	0.9778
870	0	98,235	64,882	163,116	0.0015	0.9793
880	0	54,749	145,908	200,657	0.0019	0.9811
890	25,455	83,795	106,355	215,605	0.0020	0.9831
900	26,255	26,283	33,380	85,918	0.0008	0.9839
910	0	26,733	89,442	116,175	0.0011	0.9850
920	24,451	28,927	80,602	133,979	0.0012	0.9863
930	26,733	0	0	26,733	0.0002	0.9865
940	0	0	39,975	39,975	0.0004	0.9869
950	24,451	31,585	18,940	74,975	0.0007	0.9876
960	20,355	48,442	221,287	290,084	0.0027	0.9903
970	0	55,775	28,696	84,471	0.0008	0.9911
980	0	27,107	18,969	46,076	0.0004	0.9915
990	27,171	0	0	27,171	0.0003	0.9918
1000	0	20,348	0	20,348	0.0002	0.9920
1010	0	28,404	0	28,404	0.0003	0.9922
1020	0	0	103,350	103,350	0.0010	0.9932
1030	0	0	45,668	45,668	0.0004	0.9936
1040	0	16,659	29,540	46,199	0.0004	0.9940

Appendix D Table 11a. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
1050	0	0	18,015	18,015	0.0002	0.9942
1070	0	0	48,672	48,672	0.0005	0.9947
1080	0	26,313	0	26,313	0.0002	0.9949
1090	0	26,649	59,574	86,224	0.0008	0.9957
1110	0	33,156	0	33,156	0.0003	0.9960
1120	0	47,097	0	47,097	0.0004	0.9964
1140	0	0	16,379	16,379	0.0002	0.9966
1150	0	0	29,756	29,756	0.0003	0.9969
1180	0	0	28,683	28,683	0.0003	0.9971
1200	0	0	63,259	63,259	0.0006	0.9977
1220	0	0	19,987	19,987	0.0002	0.9979
1230	0	32,416	61,804	94,220	0.0009	0.9988
1250	0	0	16,743	16,743	0.0002	0.9990
1380	0	27,107	48,746	75,854	0.0007	0.9997
Total	**24,152,365**	**28,477,086**	**54,813,628**	**107,443,080**	**1.0000**	**1.0000**

Appendix D Table 11b. -- Population estimates by sex and size for **Pacific halibut** (*Hippoglossus stenolepis*) from the 2010 northern Bering Sea bottom trawl survey.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
360	30,900	0	0	30,900	0.0042	0.0042
390	0	31,262	0	31,262	0.0043	0.0085
420	0	119,532	0	119,532	0.0164	0.0249
430	62,612	58,819	0	121,431	0.0167	0.0416
440	53,067	0	0	53,067	0.0073	0.0489
450	0	214,562	0	214,562	0.0294	0.0783
460	64,071	157,655	0	221,726	0.0304	0.1087
470	32,635	120,023	0	152,658	0.0209	0.1297
480	0	61,020	0	61,020	0.0084	0.1381
490	32,635	211,523	0	244,159	0.0335	0.1716
500	62,171	215,695	0	277,866	0.0381	0.2097
510	65,665	94,776	0	160,441	0.0220	0.2317
520	94,377	236,333	0	330,710	0.0454	0.2771
530	31,853	274,726	0	306,579	0.0421	0.3191
540	91,521	267,720	0	359,241	0.0493	0.3684
550	63,115	248,572	0	311,687	0.0428	0.4112
560	126,683	64,278	28,129	219,091	0.0301	0.4413
570	191,763	125,224	18,503	335,490	0.0460	0.4873
580	31,262	119,732	0	150,994	0.0207	0.5080
590	126,093	179,746	0	305,838	0.0420	0.5500
600	32,361	91,469	0	123,830	0.0170	0.5670
610	0	154,187	0	154,187	0.0212	0.5881
620	0	248,653	0	248,653	0.0341	0.6222
630	33,312	62,021	0	95,333	0.0131	0.6353
640	33,704	155,998	0	189,702	0.0260	0.6613
650	28,440	123,654	0	152,093	0.0209	0.6822
660	31,262	63,623	0	94,885	0.0130	0.6952
670	28,440	32,361	0	60,800	0.0083	0.7036
680	0	62,498	0	62,498	0.0086	0.7122
690	0	208,103	0	208,103	0.0286	0.7407
700	0	56,912	0	56,912	0.0078	0.7485
710	61,518	63,254	0	124,772	0.0171	0.7656
720	0	157,837	0	157,837	0.0217	0.7873
730	29,862	124,016	0	153,878	0.0211	0.8084
740	0	34,906	0	34,906	0.0048	0.8132
750	0	63,395	0	63,395	0.0087	0.8219
760	64,488	96,816	0	161,304	0.0221	0.8440
770	0	92,717	0	92,717	0.0127	0.8567
780	0	152,951	0	152,951	0.0210	0.8777
790	0	32,095	0	32,095	0.0044	0.8821
800	0	154,899	0	154,899	0.0213	0.9034
810	0	94,069	0	94,069	0.0129	0.9163
830	30,446	60,621	0	91,068	0.0125	0.9288
840	0	29,862	0	29,862	0.0041	0.9329
860	0	33,312	0	33,312	0.0046	0.9375
880	0	34,906	0	34,906	0.0048	0.9422

Appendix D Table 11b. -- Continued.

Length (mm)	Males	Females	Unsexed	Total	Proportion	Cumulative proportion
890	0	34,600	0	34,600	0.0047	0.9470
910	0	94,749	0	94,749	0.0130	0.9600
920	35,503	0	0	35,503	0.0049	0.9649
930	0	29,011	0	29,011	0.0040	0.9688
960	0	35,103	0	35,103	0.0048	0.9737
970	0	32,635	0	32,635	0.0045	0.9781
980	0	35,503	0	35,503	0.0049	0.9830
990	0	29,011	0	29,011	0.0040	0.9870
1000	0	35,503	0	35,503	0.0049	0.9919
1150	0	30,261	0	30,261	0.0042	0.9960
1320	0	29,011	0	29,011	0.0040	1.0000
Total	**1,569,760**	**5,671,720**	**46,632**	**7,288,112**	**1.0000**	**1.0000**

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